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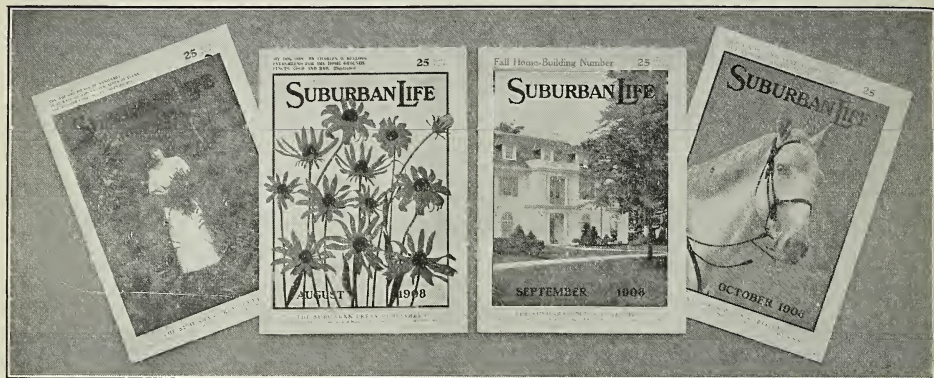


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Honey Markets.

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

For grading rules, both Eastern and Colorado, see previous issues.

CINCINNATI.—The market on comb honey is more active, and there are some large lots moving. There will be no big prices, due to the fact that there is considerable old honey left over from last year. No. 1 white comb honey is selling at 14 to 15 in small lots; dark or off grades are not selling at any price, as there is no demand for them. Amber honey is in good demand at 6½ to 7. White-clover honey is selling at 8 cts. in 60-lb. cans; water-white sage, fancy, 9. Beeswax is in fair demand at 30. The above quotations are what we are selling at.

C. H. W. WEBER,
Cincinnati, O.

Nov. 21.

ZANESVILLE.—The generally quiet condition of business continues to affect the demand for honey. Both comb and extracted are moving slowly, though some revival is anticipated between now and the holidays. Most of the honey now on this market is of very good quality. The jobbing trade is offering producers 12½ to 13 for fancy white comb, and 12 to 12½ cts. for No. 1, and for best clover extracted, 7 to 8—no demand for off grades, and practically no change in the wholesale market since the last report. I offer for good yellow beeswax 29 to 30, according to quality; 30 to 31 in exchange for bee-supplies.

E. W. PEIRCE,
Zanesville, O.

Nov. 21.

INDIANAPOLIS.—While prices are not high, the demand for honey has never been better—a fact that can be attributed to the quality of goods now on our market. This is a white-clover district, and our market is almost free from honey from other sources. Producers are offering fancy white comb at 12½; No. 1 white, 12; white clover, extracted, in five-gallon cans, 7. Some amber honey is being offered, but the demand is not sufficient to establish a price. Beeswax is steady at 28 cts. cash, or 30 cts in exchange for merchandise.

Nov. 19.

WALTER S. POWDER, Indianapolis.

CHICAGO.—The volume of business is not normal, yet there is some honey selling all the time. It looks as though the people were going to use more of it through the winter than has been the case for the last few years; but they are going to buy it as they want it, reasoning that they can get it as needed. Prices are steady at 13 to 14 for A No. 1 to fancy, other grades ranging from 1 to 3 cts. per lb. less. Extracted white ranges from 7 to 8 according to quality, flavor, and style of package. The amber grades from 6 to 7. Beeswax is steady, and sells upon arrival at 30 if free from impurities.

Nov. 18.

R. A. BURNETT & CO.,
Chicago.

SCHENECTADY.—There has been quite a demand for extracted honey from the wholesale trade during the past week, but comb stock is moving very slowly, while receipts are in excess of sales. We look for some improvement this week on account of the stimulating effect of Thanksgiving holiday on trade generally. We quote fancy clover, white, 15 to 16; No. 1, 14 to 15; fair to good, 12 to 13; buckwheat, fancy, 12 to 12½; fair to good, 10 to 11. Extracted, dark, in 60-lb. cans and 160-lb. kegs, 6½ to 7½; light, 7 to 8. Beeswax, without demand.

Nov. 18.

CHAS. McCULLOCH,
Schenectady, N. Y.

SAN FRANCISCO.—Comparatively little honey is arriving at present, and stocks in this market are light. Trading, however, is quiet, and sales are made at the former figures. Water-white comb, per lb., 16 to 17; white, 15; water-white extracted, 8 to 8½; light amber, 7 to 7½; dark amber, 5¼ to 5½; candied, 5¼ to 5½.—*Pacific Rural Press*, Nov. 14.

ST. PAUL.—Receipts of honey are very light; demand moderate, and prices steady. The prices below represent those obtained for shipment in small lots: Fancy white-clover and basswood, new, 13 to 14; buckwheat, 10 to 12½; extracted in 60-lb. cans, 7 to 8.—*Board of Trade Bulletin*, Nov. 9.

LIVERPOOL.—There is no change in prices, and stocks are small. Chilean, 4¼ to 6½; Peruvian, 3½ to 4¼; California, 8½ to 10½; Jamaican, 4 to 5; Haiti, 5 to 7. Beeswax, firm. African, 26½ to 28; American, 30 to 33; West Indian, 29 to 32; Chilean, 30 to 35; Peruvian, 33; Jamaican, 34 to 35.

TAYLOR & CO.,
7 Titebarn St.

Nov. 9.

ALBANY.—The honey market is easier under heavier receipts. While we do not change the asking price, we make concessions rather than lose sales. The crop in this vicinity is less than usual, but there are more people unemployed now than a year ago. We quote fancy clover, 15; No. 1, 14; mixed, 13; buckwheat, 12 to 13; extracted white, 7½ to 8; amber, 7; buckwheat, 7. Beeswax, 30 to 32.

Nov. 17.

H. R. WRIGHT, Albany.

KANSAS CITY.—Market is well supplied with comb honey. Demand fairly good. Prices are as follows: Fancy comb in 24-section cases, at \$2.90 to \$3.00 per case; No. 1 at \$2.75; No. 2, \$2.50. Extracted, 7 to 8 cts. per lb. Beeswax, 28 cts.

Nov. 21.

C. C. CLEMONS PRODUCE CO.,
Kansas City, Mo.

BOSTON.—White fancy comb honey, 15 to 16, No 1 ditto, 13 to 14; extracted white, 9 to 10; extracted amber, 7 to 8; amber in barrels, 6 to 7. Beeswax, 30.

Nov. 6.

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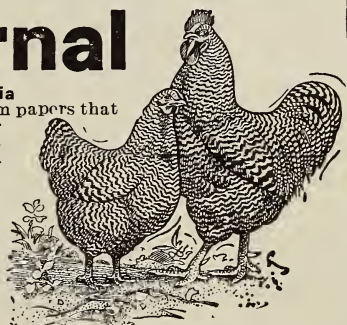
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Philadelphia

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MR. RICE, THE "PAINT MAN."

It is with pleasure we announce the fact that Mr. Rice "The Paint Man" is again a user of these columns. We are always glad to see an old friend return to the fold, and in this case we are peculiarly gratified because it shows our readers are users of paint. It indicates tidiness and general neatness, and also care to be a user of paint. The kind of paint sold by Mr. Rice is such that almost any one can afford to be liberal with it, and that is a great point. It requires no oil, and therefore effects a great saving. Thousands of customers have used it with satisfaction, so it is no experiment whatever. There are many who insist that oil in a paint is entirely unnecessary, and it begins to look like it when one reads the testimonials submitted by Mr. Rice. If you are a user of paint, large or small, we believe it will pay you to get in touch with Mr. Rice. We think that on careful and mature investigation, backed up by a careful trial, you will decide that oilless paint has real merit and is worthy of extended use for many purposes around the farm home.

A SPLENDID CHRISTMAS PRESENT.

Very few articles are more appropriate for Christmas presents than fountain pens of good quality. Such a pen in one's pocket is always handy and is a constant reminder of the one who gave it. Good fountain pens can now be obtained for the sum of \$1.00 from the Laughlin Fountain Pen Co. who advertise in this journal. Formerly as good a pen sold for \$2.50 or thereabouts. Now they are within the reach of all at a dollar each. The Red Gem is particularly desirable as it may be slipped into the vest pocket unlike the ordinary pen. It will be a hard matter to find a nicer Christmas present. It writes just like an ordinary pencil and requires no special attention to keep it in order. The lead pencil has an awkward way of breaking just when one wants it most, but the Red Gem writes a long time before it requires a fresh supply of ink. The Laughlin Co. are so sure they have a good thing that they make an extremely liberal offer to those who find they do not want the pens after trying them. It is the "square-deal" principle carried clear out to the end. Nothing could be fairer.

A WOODEN SITTING HEN.

Mr. George H. Stahl, the celebrated maker of wooden hens, is again using these columns to make known their merits to the whole world. Mr. Stahl is one of the pioneer makers of incubators in America. It does not seem necessary for us to enlarge on the merits of his manufactures, as he must be well known to many of our older readers, for he has periodically used these columns for a number of years. If you are in want of an incubator this season we would suggest that you write Mr. Stahl, stating your desires.

WINDBREAKS FOR THE FARM.

In the Central States and the Mississippi Valley there exists an absolute necessity for good windbreaks to protect from the chilly blasts all kinds of farm stock and crops. In many sections windbreaks are very necessary for the protection of fruit-trees, vegetables, and farm crops. Many farmhouses could be rendered far pleasanter by the addition of good strong windbreaks. They take the sting out of the wind, and rob the "norther" of its terrors. It is not a difficult proposition to get a windbreak. If you will write to The Gardner Nursery Co., box 26, Osage, Iowa, they will tell you just what you ought to plant, how to plant, and the cost of the trees. They have trees on purpose to resist blizzards. In a few short years you will be proud of your windbreak if you go to work and plant it now. It will be an improvement which will add much to the selling value of the farm—far more than it costs you. The same concern also sells fruit-trees suitable for the blizzard belt. They have also a line of hardy ornamentals so that they are in position to supply all the trees a farmer needs for the adornment and protection of his home.

THE "IDEAL" INCUBATOR.

Nowadays there are a great many makers of incubators in the world, and more particularly in the United States. One of the most reliable firms of incubator-manufacturers is the J. W. Miller Co., box 48, Freeport, Ill. They make a nice line of medium-priced chick-machines which will compare very favorably with those made anywhere, quality and price being both considered in the deal. They have been in that business for a quarter of a century, hence their reputation is made, and they are not under the necessity of making big statements to draw attention to their wares. Their advertisement, which is inserted elsewhere in this paper, is quite modest, but they do a large trade nevertheless, because they are widely and favorably known among poultry-breeders all over America and across the ocean as well. They issue a very fine catalog which is sure to interest every lover of poultry, no matter how small his place may be. Write for it right now.

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Delineator	1.00	
World's Work	3.00	
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Any of these books on which postage is not given will be forwarded by mail postpaid, on receipt of price.

As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice that you can judge of the size of the books very well by the amount required for postage on each.

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3 New Testament in pretty flexible covers.....	05
<i>One-half off on all Gospel Hymns mentioned above.</i>	
5 New Testament, new version, paper covers.....	10

10 | New Testament, both Spanish and English.... 25
In this book the Spanish is given in one column, and the English right opposite in another column. Every verse is opposite the corresponding one in the column adjoining, so that it affords the reader the very readiest means of comparing the language of the two. The writer has found this book to be a great help in the learning of Spanish, and he has also received spiritual benefit by getting a glimpse of the word of God in another language. The book is published by the American Bible Society, and we hope and trust it may have a good sale.

6 | Christian's Secret of a Happy Life. Cloth..... 25
For several years we have been unable to get a nice substantial copy of this book at a reasonable price. We are glad to tell our friends now, however, that we have a very pretty edition, bound in cloth, at the very reasonable price of 25 cents. If wanted by mail, add 6 cents for postage. This book has had a very large sale for more than 20 years, and when I tell you that quite a number of people have been converted to the Lord Jesus Christ simply by reading it you will no longer wonder why it sells. At one time it was carried and sold by the newsboys on our railways. It not only contains a wonderful "secret" for unbelievers, but for many who have been church-members all their lives, but not the "happy" church-members that God intended we should be.

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Or "Bee Culture and the Securing of Honey," a German bee-book.	
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5 British Bee-keeper's Guide-book, by Thomas William Cowan, England &.....	95
5 The Honey-bee, by Thos. William Cowan.....	95
10 How to Keep Bees.....	90
3 Merrybanks and His Neighbor, by A. I. Root....	12
10 Forty Years Among the Bees. By Dr. C. C. Miller, Marengo, Ill.....	90
15 Modern Bee-farm. By S. Simmins. New edition; cloth bound.....	1 85

MISCELLANEOUS HAND-BOOKS.

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5 | A B C of Carp Culture, by Geo. Finley..... 25
5 | A B C of Strawberry Culture,** by T. B. Terry. New edition, revised and enlarged; paper, 45c; cloth, 68c; by mail, 75c.

5 | A B C of Potato Culture, Terry** New edition, revised & enlarged; paper, 45c; cloth, 68c, mail 75c. This is T. B. Terry's first and most masterly work.
6 | Asparagus Culture..... 40
6 | Alfalfa Culture..... 40
8 | Barn Plans and Out-buildings..... 90
2 | Celery for Profit, by T. Greiner**..... 25
The first really full and complete book on celery culture, at a moderate price, that we have had. It is full of pictures, and the whole thing is made so plain that a schoolboy ought to be able to grow paying crops at once without any assistance except from the book.

10 | Draining for Profit and Health, Warring..... 90
8 | Domestic Economy, by I. H. Mayer, M. D.**... 30
This book ought to save at least the money it costs, each year, in every household. It was written by a doctor, and one who has made the matter of domestic economy a life study. The regular price of the book is \$1.00, but by taking a large lot of them we are enabled to make the price only 30 cents.

10 | Fruit Harvesting, Storing, Marketing, etc..... 75
It has been well said that it is an easier matter to grow stuff than to sell it at a proper price after it is grown; and many men fail, not because they are inexperienced in getting a crop, but because they do not know how to sell their crops to the best advantage. This is the first book of the kind we have had as an aid in selling. It not only tells all about picking, sorting, and packing, but gives all the best methods for storing for one or two days or a longer time. It also tells about evaporating and canning when there is a glut in the market. It discusses fruit packages and commission dealers, and even takes in cold storage. It is a new book of 250 pages, full of illustrations. Publisher's price, \$1.00.

| Farming with Green Manures, postpaid**..... 90
This book was written several years ago; but since competent labor has got to be so expensive, and hard to get, many farmers are beginning to find they can turn under various green crops cheaper than to buy stable manure, and haul and spread it—cheaper, in fact, than they can buy fertilizers. This book mentions almost all plants used for plowing under, and gives the value compared with stable manure. Some of the claims seem extravagant, but we are at present getting good crops, and keeping up the fertility, by a similar treatment, on our ten-acre farm.

7 | Farm, Gardening, and Seed-growing**..... 90
10 | Fuller's Grape Culturist**..... 1 15
5 | Garden and Farm Topics, Henderson**..... 0
12 | Gardening for Pleasure, Henderson*..... 1 10
While "Gardening for Profit" is written with a view of making gardening pay, it touches a good deal on the pleasure part, and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations. (Retail price \$2.00.)

12 | Gardening for Profit**..... 1 10
This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts. (Retail price \$2.00.)

8 | Gardening for Young and Old, Harris**..... 90
This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

3 | Grasses and Clovers, with Notes on Forage Plants..... 20
This is by Henry A. Dreer, author of the book "Vegetables Under Glass" that has had such a large sale of late. This little book tells how six tons of grass has been grown to the acre, and gives much other valuable matter.

Postage.]

[Price without postage.

10 | Greenhouse Construction, by Prof. Taft** 1 15
This book is of recent publication, and is as full and complete in regard to the building of all glass structures as is the next book in regard to their management. Any one who builds even a small structure for plants growing under glass will save the value of the book by reading it carefully.

12 | Greenhouse Management, by Prof. Taft**.....1 15
This book is a companion to Greenhouse Construction. It is clear up to the times, contains 400 pages and a great lot of beautiful half-tone engravings. A large part of it is devoted to growing vegetables under glass, especially Grand Rapids lettuce, as well as fruits and flowers. The publisher's price is \$1.50; but as we bought quite a lot of them we can make a special price as above.

5 | Gregory on Cabbages, paper* 20
5 | Gregory on Squashes, paper*..... 20
5 | Gregory on Onions, paper*..... 20

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

| Handbook for Lumbermen..... 05
5 | Home Pork-making; 125 pages, illustrated..... 40

I think it will pay well for everybody who keeps a pig to have this book. It tells all about the care of the pig, with lots of pictures describing cheap pens, appliances, all about butchering, the latest and most approved short cuts; all about making the pickle, barreling the meat, fixing a smoke-house (from the cheapest barrel up to the most approved arrangement); all about pig-troughs; how to keep them clean with little labor; recipes for cooking pork in every imaginable way, etc. Publisher's price is 50 cents, ours as above.

15 | How to Make the Garden Pay**.....1 35
By T. Greiner. Those who are interested in hotbeds, cold-frames, cold green-houses, hothouses, or glass structures of any kind for the growth of plants, can not afford to be without the book. Publisher's price \$2.00.

| How We Made the Old Farm Pay—A Fruit-book, Green 10

10 | Irrigation for the Farm, Garden, and Orchard* 85
By Stewart. This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills to take the place of rain, during our great drouths, is the great problem before us at the present day. The book has 274 pages and 142 cuts.

3 | Maple Sugar and the Sugar-bush**..... 25
5 | Manures; How to Make and How to Use Them, in paper covers..... 30
6 | The same in cloth covers..... 65
Nut Culturist, postpaid.....1 25

3 | Onions for Profit**..... 40
Fully up to the times, and includes both the old onion culture and the new method. The book is fully illustrated, and written with all the enthusiasm and Even if one is not particularly interested in the business, almost any person who picks up Greiner's books will like to read them through.

10 | Our Farming, by T. B. Terry**..... 75
Same, paper cover, postpaid..... 50
In which he tells "how we have made a run-down farm bring both profit and pleasure."
If ordered by express or freight with other goods, 10c less.

8 | Practical Floriculture, Henderson*..... 1 10

10 | Profits in Poultry.* 1 00

10 | Small-Fruit Culturist, Fuller 75

2 | Experiments in Farming, By Waldo F. Brown. 08
This little book ought to be worth its cost for what is said on each of the four different subjects; and the chapter on cement floors may be worth many dollars to anybody who has to use cement for floors, walks, or anything else. In fact, if you follow the exceedingly plain directions you may save several dollars on one single job; and not only that, get a better cement floor than the average mason will make.

2 | Sweet Potatoes; Forty Years' Experience with. By Waldo F. Brown **..... 08
This little book, by a veteran teacher at our farm

Postage.]

[Price without postage.

ers' institutes, ought to be worth many times the price to everybody who grows even a few sweet potatoes in the garden. It also gives full particulars in regard to handling and keeping this potato, which is difficult to keep unless you know just how.

10 | Talks on Manures*1 35
By Joseph Harris. Written conversational style, which makes it very interesting reading. It covers the subject very completely; contains numerous analyses of manures and comparative tables. The use of technical language is avoided, which makes the book of greatest value to the practical farmer. A book of 366 pages, nicely bound in cloth.

5 | The New Rhubarb Culture**..... 40
Whenever apples are worth a dollar a bushel or more, winter-grown rhubarb should pay big. It does not require an expensive house nor costly appliances. Any sort of cellar where it will not freeze is all right for it; and the small amount of heat necessary to force the rhubarb costs very little. The book is nicely bound in cloth, full of illustrations, mostly photos from real work. 130 pages. Every market-gardener should have this book, for the lessons taught indirectly, in regard to forcing other crops besides rhubarb. Publisher's price 50c.

5 | Tile Drainage, by W. I. Chamberlain..... 35
Fully illustrated, containing every thing of importance clear up to the present date.

The single chapter on digging ditches, with the illustrations given by Prof. Chamberlain, should alone make the book worth what it costs, to every one who has occasion to lay ten rods or more of tile. There is as much science in digging as in doing almost anything else; and by following the plan directed in the book, one man will often do as much as two men without this knowledge.

5 | Tomato Culture 35
In three parts. Part first.—By J. W. Day, of Crystal Springs, Miss., treats of tomato culture in the South, with some remarks by A. I. Root, adapting it to the North. Part second.—By D. Cummins, of Conneaut, O., treats of tomato culture especially for canning-factories. Part third.—By A. I. Root, treats of plant-growing for market, and high-pressure gardening in general.

3 | Vegetables under Glass, by H. A. Dreer**..... 20
3 | Vegetables in the Open Air*..... 20

This is a sort of companion book to the one above. Both books are most fully illustrated, and are exceedingly valuable, especially at the very low price at which they are sold. The author, H. A. Dreer, has a greenhouse of his own that covers one solid acre, and he is pretty well conversant with all the arrangements and plans for protecting stuff from the weather, and afterward handling to the best advantage when the weather will permit out of doors.

3 | Winter Care of Horses and Cattle..... 25

This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in a book. It has 44 pages and 4 cuts.

3 | Wood's Common Objects for the Microscope**..... 47
8 | What to Do, and How to be Happy while Doing It 65

The above book, by A. I. Root, is a compilation of papers published in *Gleanings in Bee Culture*, in 1886, '7, and '8. It is intended to solve the problem of finding occupation for those scattered over our land out of employment. The suggestions are principally about finding employment about your own homes. The book is mainly upon market-gardening, fruit-culture, poultry-raising, etc. Illustrated, 188 pages, cloth.

8 | Same, paper covers..... 40

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RAISING THE WIND, AND SOME STRAWS THAT SHOW ITS DIRECTION.

By the Bee Crank

When the crop of honey is coming into the hive very freely, it happens that there is not time for the surplus moisture to evaporate down to the consistency required by the little bee-chemists before sealing. At such times the bees have a way of supplementing the natural evaporation by forming a file extending from the entrance far back into the hive, and then by rapidly moving their wings set up a current of air that acts as an artificial ventilator and carries off the surplus moisture at a more rapid rate.

There are certain seasons of the year when orders for supplies do not come in to me as freely as at other times. My method of "raising the wind" to start something at such times is to allow a special discount on all cash orders. For December I will allow four per cent on all cash business received during that month. This allowance is well



worth your while, and it helps equalize my business and to keep things moving now, and relieve the conditions during the rush times of spring. Aside from the saving of money to you, think what it means to have your supplies ready and waiting for you when you want them.

At our last Indiana State Fair we were awarded five first premiums out of the possible eight: First on Bee-supplies; first on Beeswax; first on Comb Honey; first on Hoosier-Italian Bees; first on Carniolan Bees. All this with very spirited competition, and all exhibits very creditable. Our Hoosier-Italian bees were also awarded first premium at the Illinois State Fair. A catalog of these prize-winning goods free for the asking.

I am now paying 28 cents spot cash or 30 cents in trade for good average beeswax delivered here.

Walter S. Pouder,
513-515 Massachusetts Avenue, Indianapolis, Ind.

GLEANINGS IN BEE CULTURE

Published by The A. I. Root Co., Medina, Ohio

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A. I. ROOT, Editor Home Department.

E. R. ROOT, Editor.

A. L. BOYDEN, Advertising Manager.
J. T. CALVERT, Business Manager.

VOL. XXXVI

DECEMBER 1, 1908

NO. 23

STRAY STRAWS

DR. C. C. MILLER

MR. EDITOR, I quite agree with what you say, p. 1366, about melting up combs where there is any question of foul brood. I am exceedingly thankful to say that, so far, I have no personal interest in foul brood. A few years ago it was within 12 miles of here, but I think it was not allowed to spread.

I THOUGHT I was somewhat ultra in having a space of 2 inches under bottom-bars. That's shallow compared with what John Silver has. He says, *Irish Bee Journal*, 63, "Nearly all my bottom-boards are of the reversible type, a flat floor one side, when turned upside down; this gives a three or four inch space below."

SOMETHING must be done to stop the man who edits the *Irish Bee Journal* from getting in his "digs" at every thing and everybody. Here's an item he publishes:

The *British Bee Journal* of Oct. 8 announced, for that date, a conversation of members of the B. B. K. A., at which one of the attractions would be "Stings," introduced by Colonel H. J. O. Walker."

And then what does that wild Irishman do but head the item, "The Human Sting"!

A NEWSPAPER statement was that the forest fires cost a million dollars a day. [The statement is possibly exaggerated, but nevertheless it is plain to any candid mind that millions of feet of valuable timber were burned, the loss of which can not do other than enhance the price of lumber in general, and, of course, all that is made from it, including hives. Probably this advance will not take place this year.—Ed.]

A. I. ROOT, among your experiments with cereals you might try wheat *whole*. I used it by the peck in my college days as the cheapest fodder I could live on. I didn't grind it or do any thing with it except to boil it a long time. Then when cold there would be a sort of jelly between the grains. Take it with rich milk, and chew, chew, chew it, and it makes a very satisfying meal. [See Our Homes in this issue.—A. I. R.]

LEST BEGINNERS should think, upon reading page 1363, that either by the mouth or by the sting bees inject formic acid into the cell just before capping, I will say that authorities tell us that the acid gets into the honey through the circulation of the bee. [The reader is not to understand that we affirmed that the formic acid was introduced in the manner here explained, but only desired to show that the bulletin in question did not necessarily imply that it was introduced

through the sting, *a la* Clarke. That the formic acid gets into the honey through the process of inversion, or as some prefer to call it digestion, is probably true.—Ed.]

"THEN YOU believe in the general principle of killing queens every two years, notwithstanding your 'exceptions that prove the rule,'" says ye editor, page 1364. Hardly that. Fact is, it isn't easy to tell what I do believe. Most emphatically I don't believe it would be wise for me to kill off all queens for no other reason than their being two years old. If I did that there would be no exceptional queens doing fine work in their old age, and they are just the ones I like to breed from, other things being equal. While I think Mr. Chapman's plan of requeening every year is good for him, I don't think my conditions favor it. In actual practice I let a queen live so long as she does good work. Not often do my bees allow a queen to live after that. I suspect the strain of bees may have a little to do with it.

BEESWAX WOOD POLISH.—The editor of GLEANINGS recommends beeswax and turpentine in a thin paste, page 1194. We think that he will find our recipe better for furniture polish, viz. —4 oz. each of beeswax, white wax, and Castile soap. Cut very fine and dissolve in three pints of boiling water. Then add 1½ pints of best turpentine. Rub on with one cloth; rub off with another; polish with a third. If found lumpy, stand the jar of polish in boiling water before using it.—*Irish Bee Journal*. ["White wax" is here mentioned as an ingredient. We do not know whether this refers to a bleached beeswax or to some of the mineral waxes. Our painter, who has tested paraffines and ceresines, says they have a tendency to make a greasy finish, while a pure beeswax and turpentine made into a paste makes a hard, smooth, and semi-glossy surface. We shall be glad to test this matter, and report, using paraffine for the white wax referred to.—Ed.]

YEARS AGO I stood alone in advocating legislation that would give a bee-keeper legal control of a given territory. Indeed, I stood practically alone in advocating that a man had a moral right to his own territory. A distinct change of view as to the latter has taken place. Conventions have passed resolutions condemning intrusion upon another man's territory, and many are in accord with the views of the editor of the *Bee-keepers' Review*, who says, p. 339, "The man who will crowd in upon the territory of another should be looked upon as little better than a thief." It may be a long time, as he says, before a man can legally control a territory without owning the land also; but legal control is pretty sure to come. Granted that a man has a moral control, the

righteousness of legal control follows as day follows the night. If encroachment is in the nature of stealing, why should there not be a law against it just as against any other kind of stealing?

FOR FEAR there will be no one to say a word against a tariff on honey, I arise to remark that the danger from introducing foul brood with imported honey might be greater. Not many buy honey to feed, and the up-to-date bee-keeper would not think of feeding *any* honey unless he were sure as to its source. The only danger comes from some ignoramus who doesn't take a bee-journal, and he is likely to let his bees starve before buying honey to feed them. [We do not quite know whether you are for or against a tariff on honey; but we infer that you believe no good would arise from it. But foul brood, it should be remembered, is not transmitted necessarily through the feeding of infected honey, but from the fact that it may be on sale where the bees can get at it. If it is true that foul brood is spreading very rapidly throughout the United States, it may be wise to put a tariff on honey to prevent its importation from localities where there is foul brood.—Ed.]

ONE OF THE THINGS I've wanted to know is how deep a space there can be under bottom-bars without having the bees build comb in it. John Silver says, *Irish Bee Journal*, 63, that he has a hive with a one-inch space under the frames, "and the bees keep the floor board of this hive as clean as a new pin. These frames have had an inch under for three years, and no comb is built underneath." If bees refrain from building in such a space, is it advisable to give them any thing less? [The danger of bees building comb under the bottom-bars when there is a space of more than $\frac{3}{8}$ inch, has been very greatly overestimated. It is agreed that, between the upper story and the lower story, there should not be more than $\frac{1}{16}$ inch. But between the bottom-bars and floor of the bottom-board the space can be anywhere from 1 to 3 inches—at least, various reports that have come in show that the bees will not build comb in this space except during an exceptionally heavy honey-flow. The building of such comb adds to one's supply of wax, and, what is quite important, causes the combs above the bars to be built clear down in contact with them. We have advocated for several years, as a happy medium between the extremes, a one-inch space under the frames; but we have always believed that two inches could be used to better advantage. We observe that the field bees in their return flight seem to like a large open space to fly into. When there is two inches under the frames, or even one inch, there will be a cluster of bees hanging down on which the fielders may alight. This affords the heavily loaded bees the finest kind of cushion against which to bump. Given their choice, the average bee will alight quicker on a bunch of bees than on a wooden alighting-board, no matter how favorable its slant. Mr. Vernon Burt and the editor made this a special point of observation some two years ago, when the bees were working heavily in the field. We lay prone on the ground and watched the fielders come in; and nine out of ten of them, where the entrance was from one to two inches deep, would fly clear through and alight on the other bees.—Ed.]

J. J. WILDER, *American Bee Journal*, 338, has tested Caucasians for three years, the past season in seven or eight apiaries. They are great drone-rearers, bad at gathering glue near the close of the season, build too much burr and brace-comb, and the first cross with Italians is cross. But their good qualities overbalance their bad ones. They are superior gatherers, building up stronger than Italians in spring, at the same time being less inclined to swarm. [J. J. Wilder's experience is the same as ours, except Caucasians were inferior gatherers of honey, and very much more inclined to swarm. The general testimony has been that Caucasians and Carniolans alike swarm far more than Italians, and we therefore conclude that Mr. Wilder's experience on this point is rather unusual. We have had reports to the effect that Caucasians were the equal of Italians as honey-gatherers, and somewhat ahead. But the reason they failed so much at our yard was because they swarmed and swarmed and swarmed. This could have been held in check if a man had been kept on hand to watch. The fact that the Italians, in the *same yard*, with the same treatment and environment, did not swarm, would seem to show that for out-apiary work, especially Caucasians, for us, at least, would not be very desirable.]

We should be glad to get further reports, and in the mean time we wish to draw attention again to something to which all are agreed, that this black race runs excessively to the rearing of drones. This one fact would tend, wherever they are introduced, unless checked, to run out Italians in very short order. Should it subsequently develop that they are inferior to the yellow bee, the unhappy possessor of the Caucasians would be in a bad plight. The late J. B. Hall, of Canada, for example, found this out to his sorrow, and, as he said, it took years to run out the taint of this black race.—Ed.]

EDITORIAL

By E. R. Root.

WHEN putting colonies in the cellar it would be a good time to unite any that may be weak.

A TRIP through the southern part of Ohio indicated that there has been a very severe drouth—much more severe, in fact, than in the regions immediately surrounding the big lakes. In some quarters there is a feeling that this drouth will affect the clover market for another season. As to this, see editorial elsewhere on this subject.

If you are desirous of moving your apiary a few rods, it is comparatively easy to do it during winter or the following spring. If the bees are wintered indoors, next spring set the hives out anywhere you please. If they are wintered outdoors, move the yard after the bees have been confined to the hives for a month or six weeks; but do the moving after it begins to warm up, and before the bees have had a flight.

UNCAPPING BY MACHINERY.

SCHEMES for uncapping combs are still receiving more or less attention. In the *American Bee Journal* for November is shown a machine that works on a principle somewhat similar to some described heretofore. But these machines have never gone beyond the experimental stage. Possibly the application of steam heat to the knives may go a long way toward solving the problem.

MILKING HONEY OUT OF EXTRACTING-SUPERS.

STRANGE as it may seem, a subscriber has a scheme for "milking" the honey out of a hive without the removal of a comb or uncapping the same; and, stranger still, he has actually sucked the honey out of several supers by means of a strong suction-pipe. We are not at liberty to give the details just now, but we expect to do so when the inventor has perfected his invention.

SHOULD DRONE COMB BE USED IN EXTRACTING-SUPERS IN PLACE OF WORKER?

IN the *American Bee Journal*, Mr. M. H. Reed, secretary of the Irish Bee-keepers' Association, is said to urge that, for extracting purposes, drone comb should be used, for the reason that honey will flow more readily from the larger than from the smaller cells during the operation of extracting, and for the further reason that "bees naturally draw out drone-cells more readily than worker-cells."

We should be glad to hear from some of our subscribers on this point. Unless perforated zinc zinc is used, the queen would be quite sure to occupy this drone comb, and the result would be a lot of waste in the rearing of useless drones. This is a good theme for discussion, and we should be glad to hear from some of our subscribers.

IT PAYS TO MELT OLD COMBS.

ON p. 1366, last issue, we promised to give figures showing the results of rendering the very old combs mentioned. There were 225 combs, Langstroth size, and the total amount of wax secured was 69 pounds, which is a little over 3 pounds to each 10 combs. The total time of rendering was 9 hours. The combs were melted in two wash-boilers, and run through the press twice, yielding 63 lbs. of wax the first time, and 6 the second.

At 30 cts. per lb., 69 lbs. of wax will bring \$20.70. From this we must deduct the cost of the labor, \$1.80, leaving \$18.90.

Medium brood foundation, to fill 225 Langstroth frames, at 51 cts. per lb., amounts to about \$16.32, so that we get our full sheets of foundation for nothing, and have considerable left. The work could usually be done when the labor would not be worth 20 cts. an hour. But even if this is not possible, there is nothing lost.

ALEXANDER'S ARTICLES IN BOOK FORM.

We have had so many requests of late to put Alexander's articles in book form that we are now arranging to publish a collection of his best papers. The little volume will be ready for distribution probably some time in January, and will be sold for 50 cts. In the mean time we shall be glad to club it with *GLEANINGS* one year

both for \$1.00. We will enter subscriptions immediately, and will send the book as soon as it is published.

The new volume will contain the cream of Mr. Alexander's writings; and when it is remembered that his career as a bee-keeper covered over forty years, and that during that time he managed hundreds of colonies in one yard, producing carloads of honey in a single season, his book should have a ready demand, especially when it is clubbed with the journal for \$1.00, for this is the only way in which it will be sold for the present. All arrears, if any, must be paid before advantage can be taken of this offer.

SPECIAL OFFERS ON RENEWALS.

AT this season of the year, many subscriptions for this journal will expire. Owing to the recent ruling of the Postoffice Department we are not permitted to send the journal but for a short time after the period for which the subscription has been paid; and we desire to remind those in arrears that, if they wish the journal without a break, it will be necessary to renew at once. In view of the fact that we can not continue the journal very long after the time paid for, we are making exceptionally low offers. If our friends will take advantage of them at once they will not miss a single issue. For example, we are making a special low offer on *GLEANINGS* one year, and Doolittle's 50-cent book, both for the price of the journal alone—\$1.00; but all subscriptions must be paid for one year in advance before advantage can be taken of this offer.

1908 CROP OF HONEY NOT AS LARGE AS FIRST REPORTED.

EVIDENCE is beginning to come that indicates that the crop of honey the past season, outside of the central-northern States, was not as large as earlier reports showed. One large buyer of honey is reporting that, in some sections at least, the crop is much lighter than it was last year, and that offers he has made have failed to secure honey. Another buyer went so far as to state that, even in the central-northern States, the crop was not as large as was first reported, as he finds some difficulty in getting all he requires for his trade.

Apparently our advice to sell honey around home has had some effect, as we have been informed that the local trade all over the country has been developed this year as it never was before. If, on top of this, the aggregate amount of honey in the United States was lighter than was reported early in the season, it is evident that prices ought now to stiffen. But it is now getting late, and *comb* honey, at least, ought to be disposed of before the general stagnation in price takes place that is apt to follow after the holidays. On the other hand, it may be advisable, in some cases at least, to hold over good extracted, awaiting a better market for another year.

WILL THE DROUTH THIS FALL AFFECT THE CLOVERS FOR NEXT SEASON?

ON page 1365, November 15, we quoted the editor of the *Review* as fearing that the long drouth had so far killed out the clovers that next year would be a light one for honey. Over

against this we introduced the testimony of a practical farmer of our acquaintance who was very certain that the drouth, at least in clay soils, had not affected the clovers. Since then we have had another talk with the same party, and he went on to explain his position in this wise: "Mr. Root, the clovers have roots that run down deep into the ground. If there is a good catch, and the roots get fully started, the clovers will stand a fall drouth very nicely. What kills the clovers is not drouth, but too much water in the ground, and hard freezing, resulting in what we farmers generally call *winter-killing*. It would take six weeks of hard rain to wet the ground so that a severe winter would do very much damage to the clovers, and I do not expect it now. If we get a reasonable amount of snow and rain between now and next spring, I predict that we shall see one of the biggest years for clover honey that we have had for years. Of course, I admit that the young clovers may be killed out by fall drouth—that is, before the roots have got very much of a hold. But you must remember, Mr. Root, that we have just had a splendid season for clover, and the roots of the last season's plants have been pretty well extended down into the soil. No, sir; I do not think the conditions this fall have been unfavorable, but quite to the contrary."

We have been taking pains to make inquiries among several farmers. One in particular, and a bee-keeper as well, we approached somewhat after this fashion:

"What do you think is going to be the effect of this drouth on clovers?"

Said he, "Why, it is not going to hurt them at all. I am looking for one hundred extra colonies that I should like to buy, because I am expecting a big year, and I want *more bees*."

"But suppose the clovers winter-kill?" we interposed.

"Of course, that is possible," said he, "but not probable under the conditions."

And then, without knowing the opinion of our other farmer friend, he went on to state that a dry soil is less likely to kill the clovers by reason of cold than a very wet one.

We have approached other farmers, with practically the same result. While they are located in Northern Ohio, they gave it as their opinion that a fall drouth is not necessarily hurtful to clover.

Whether a sandy soil during a period of fall drouth would be more hurtful than a clay soil on clovers, we can not say; but we should be inclined to think that way. If so, this would go to confirm, in part, the fears of Mr. Hutchinson, whose bees are all located on a sandy soil.

We should be pleased to get reports from all over the country, as this is a vital and important question. It is possible and even probable that locality has very much to do with it; but as most bee-keepers are located on a clay soil, we hope the outlook may be more favorable than the editor of the *Review* has feared.

Editor York:—In the *American Bee Journal* for October, on the first editorial page, is a comment entitled, "The Honey Market Unusual," wherein it is claimed that comb honey stands firmly in San Francisco at 17 cents. By the way, I see GLEANINGS makes the same claim.

Now, the above quotation is very far from the truth, in proof of which I enclose two letters, one from a commission firm in Sacramento, and the other from a bee-keeper in Nevada. Note the commission man informs me that Mono County and Nevada have had big crops of honey. Well, I know that Mono County had less than 400 cases of comb honey; and Mr. J. W. Carter, of Nevada, informed me in September that this was the poorest honey season he had known in his bee-keeping experience of 17 years. So far as my own experience goes, this is my first season in this part of the country.

H. CHRISTENSEN.

Coleville, Mono Co., Cal., Oct. 26.

We do not see any thing in this letter that really *proves* that the market has been quoted too high. While it is true that Mr. Christensen introduced the name of a commission firm as authority for the statement that there is a large supply of honey in Nevada and in Mono and Inyo counties, Cal., it is proper to remark that some commission firms biased by selfish interests make statements going to show that there are large supplies in sight when there are not.

Then Mr. C. introduces another statement, to the effect that a Nevada bee-keeper says all he can get is $9\frac{1}{2}$ for the first grade of comb, and $8\frac{1}{2}$ for the second, as tending to show that our quotations run too high. Over against these two statements Mr. Christensen states on *his own positive knowledge* that Mono Co. had less than 400 cases of comb honey, and that J. W. Carter, of Nevada, informed him that this was the poorest honey season he had known in a bee-keeping experience of 17 years. We can not understand why Mr. Christensen should discredit his own knowledge by introducing a claim from a party who may have an "ax to grind." Then it would seem to us that the statement from Mr. Carter ought to have as much weight as that of the other bee-keeper who said he could not get more than $9\frac{1}{2}$ cents for the reason that the supply was large.

It is a rather significant fact in this connection that prices on California sage honey are relatively high in Liverpool, England. If there is so much honey available as the commission man in question would have us believe, why is it quoted high in Liverpool? and why does he not make a "big scoop" by buying up all the honey in sight and shipping it to England?

Another significant fact worthy of note is that the market in New York seems to be rather bare of California sage honey of any kind, and prices there are pretty well up. If there was an oversupply at Sacramento, or even San Francisco, it would naturally gravitate to the Eastern markets as it always has done. But the fact is, California honey in the East is not very much in evidence this season.

Our quotations for San Francisco were furnished us by the *Pacific Rural Press*—a journal which has no interest in quoting the market either high or low. We have heretofore found their quotations quite reliable; and with all the evidence in hand we are yet to be convinced, even on Mr. Christensen's letter, that the San Francisco market is quoted too high.

We shall be glad to hear from local bee-keepers in and about San Francisco, or, in fact, from all over California, for that matter. While we admit that we desire to keep prices up, we do not wish to do so if the facts do not warrant it.

HAS THE SAN FRANCISCO HONEY MARKET BEEN QUOTED TOO HIGH?

In the *American Bee Journal* for November, p. 327, is a letter to editor York, which we here reproduce:

CONVERSATIONS WITH DOOLITTLE

SOME QUESTIONS ANSWERED.

A correspondent asks me if I will answer some questions through GLEANINGS. He says he is a novice in bee-keeping, and wishes me to simplify my answers so that even a novice can understand, taking it for granted that GLEANINGS has many readers who are little if any further advanced than he is. I think it best to answer his questions by number rather than in the usual conversational style.

1. I have been thinking of putting my 32 colonies all together for wintering, setting the hives so close together that the hives will all touch one another except the entrance part, which will face outward, packing underneath, on top and around the whole with chaff or old carpet, so that the heat of the whole will keep all warm and at an even temperature. What do you think of the plan?

Answer.—My fear would be that, during some warm spell in winter, they would become too warm, go to breeding, and eventually die of diarrhea and exhausted vitality. Some years ago one of our leading apiarists took fifty colonies out of their original hives and placed them in boxes made to contain four frames of sealed honey. On either side of these boxes wire cloth was nailed, and the whole fifty placed in one large box, which box was set on a car and run into his underground bee-cellar. The idea was the same as yours, that each would help maintain a mutual warmth for the whole, and thus save honey and promote good wintering. After all were in the box, old carpeting to the depth of four or five inches was placed over them, and they were left undisturbed for four or five weeks. The normal temperature inside of the cluster of bees during winter, when they are in really good condition, is from sixty to seventy degrees. At the end of five weeks the temperature inside the box was found to be above 90°, with the bees all in commotion, trying to get out to escape such a degree of heat. The car was run out the first mild day thereafter, and thousands of bees came out and died. The result was that two-thirds of the colonies were dead before the first of March, while on April 15 not one of the fifty colonies was living. This would go against your proposed experiment; but if you so desired you could try eight or ten colonies, as they might do better this way outdoors than in the cellar. It is always well, when trying new experiments, to use only a small part of our stock for the trial, and thus not make a serious failure by putting all our eggs in one basket.

2. Is early pollen necessary to successful bee-keeping?

Answer.—From my point of view I should say yes. The first pollen in spring in this locality comes from skunk-cabbage, followed by pussy willow, soft maple, and elm. This pollen stimulates the bees to brood-rearing and great activity, upon which much of the profit of the season depends. The next source of pollen comes from the hard maple, this coming into bloom a few days before the fruit-trees. This source gives an abundant yield of pollen; but I have noticed

many times that, where the first mentioned are killed by frosts, the bees are not in nearly as good shape at time of fruit-blooming, no matter how favorable the weather between blooms may be, as is the case where any one or all of the four first named give the bees a chance to store from them. In selecting a location a person should know that some one of the early-pollen producers are present if they are to expect the best possible success. Artificial pollen, such as rye or oat meal, can be substituted, but none of them can ever take the place of natural pollen as a stimulant for bees. In years when the early pollen was killed by frost I have fed the bees meal; and, while it was a pretty sight to see thousands of bees at work in the meal, and hovering over it while it was being packed in the pollen-baskets, yet a much smaller amount of brood would be reared under precisely the same weather conditions than when the bees had access to natural pollen.

3. The past summer I saw a bee dragging out a dead drone, and when she came to the edge of the alighting-board she flew some ten or twelve feet, carrying the dead drone with her. Does this not show that a bee has strength greater in proportion than man?

Answer.—Yes. Bees have a most marvelous power when that power is compared with man or even a horse. If the apiarist had even half the strength in proportion to that which the bee has, none of us would complain about lifting heavy hives, or be experimenting with hive-lifting devices. But, after all, man is much superior to the bee in that he brings and makes all the forces of nature subject to him.

4. I wish you would tell the readers of GLEANINGS how to avoid being stung. A man who once met you at a convention said you told him that you did not now receive one sting to where you did twenty when you first commenced to keep bees. Is it the kind of bees you keep?

Answer.—Bees are cross sometimes, and cross bees often sting. Some classes of stings are unavoidable. A bee may become so infuriated as to strike without warning, and sting as it strikes. However, bees must be badly provoked to do this, and *never* do so except as the object of their disturbance is near their hive or home. The novice in apiculture is generally quite inclined to think bees are roaming around, bent only on stinging every thing far and near. This is not so, for a bee seldom ventures an attack ten rods from its hive, and very seldom then unless its hive has been molested. Besides the unavoidable class of stings caused as above, the novice, by his way of provoking the bee, is apt to get many more. If a bee having an inquiring mind comes looking around the face or hands of such a person, the first thing he does is to begin striking at it, which only tends to irritate the bee. Every move makes the matter worse. Shrieking, beating the air, and tearing insanely about, as very many are apt to do, are only so many steps leading to a melancholy and almost certain result. When such a bee comes near, instead of doing as above, gently incline the rim of the hat toward it; and if it still persists in buzzing about the head, put the hands or arms up before the face and walk quietly away from near the hive, when the bee will soon leave you. If several attack

you, use this same way; and as soon as you are a little way from the hive, put your head (protected by the arms at the face) in some leafy bushes which may be near by. Or in the absence of the bushes, go prone, face down, on the ground, when in a few minutes all the bees will leave you, and you can walk quietly away. Of course, when you are at work with the bees it is best to wear a veil, which is all the protection you need if you are careful with your work with the hives. Be careful about jarring the hive before you tell the bees you are there by giving them a puff or two of smoke at the entrance, and, above all, avoid the killing of bees, as the poisonous smell that fills the air where bees are crushed is one of the quickest ways to irritate them.

NOTES FROM CANADA

By R. F. HOLTERMANN.

ROBBING.

I found by accident that, for covering supers of honey in the apiary at robbing time, the best material is a felt cloth loosely put together. The bees appear to be afraid to alight on it. I suppose it looks to them about as inviting as a loose brush-heap looks to a man for strolling through.

FINDING QUEENS IN POPULOUS STOCKS.

At the last Norfolk County Bee-keepers' convention held recently at Simcoe, F. J. Miller, President of the Ontario Bee-keepers' Association, gave his method of finding a queen in a populous colony, mentioning the method specially in connection with finding queens for clipping. He instructed the bee-keepers to give the colony a fairly sharp smoke at the entrance of the hive. The bees will roar, and the sound is to be noted. In about 2½ minutes the bees should be given a *few* more sharp puffs at the entrance so they will again roar. The moment the roar changes from the sharp to the lower note, the queen, in a hive not deeper than the Langstroth, will be found in the bee-space below the cover. Mr. Miller stated that the colony must be strong if this method is to be a success, but that such colonies were the very ones in which it is difficult to find the queen.

REQUEENING.

I made the statement at the same convention that there is less need for bee-keepers to requeen the colonies where there is a fall flow. The bees, in a locality having a fall flow, are much more apt to supersede defective or failing queens themselves during this flow. The first time I saw an apiary during a good buckwheat flow was when visiting Mr. C. W. Post. He at that time showed me in one apiary eight colonies in which mother and daughter were laying in the same hive.

BASSWOOD POLLEN.

Some time ago a highly valued friend and well-known contributor to GLEANINGS made the statement that basswood has no pollen. I tried to

point out that, according to nature's laws, this would be impossible. The United States Department of Agriculture has issued a Bulletin (No. 110) which Dr. Wiley has been kind enough to send to me. This includes "A Microscopical Study of Honey Pollen," by W. J. Young, assistant, Microchemical Laboratory. On page 79 (Fig. 6) we find illustrated the pollen grains of basswood. This surely settles the matter. It might be instructive for GLEANINGS to reproduce illustrations of some of the pollens in which bee-keepers are most interested.

STOPPING UP LEAKS IN HIVES.

When moving bees I always carry about me an assortment of nails, crate-staples, and a hammer. I formerly had convenient strips of wood to stop up leaks; but for over a year I have used for this last purpose cotton-batting. For this purpose it is superior to any thing else I ever used. In a moment it can be broken into any size; it can be made to fit any opening; it sticks well where put, and it is so loose in texture that the bees prefer to leave it alone. I also have the smoker going, especially in the early part of the trip. I am giving this information because the idea has been of value to me. Some readers of GLEANINGS think I have a lot of rough uneven hives; but this is not the case. Accidents will happen in the best-regulated houses, and it is well to be prepared for them.

TURNING LOSSES INTO PROFIT.

W. S. Manley, at the National convention at Detroit, stated that it seemed to be a rather difficult matter to turn losses into profit; but that a loss can be turned into profit whenever one has to go through an experience in which the first loss prevents him from making the same mistake again. Friend Manley lost his bees, and his neighbors lost theirs because the stores gathered in the fall were not good. Of course, he wisely decided that there was no use in losing the wax and combs as well as the bees, and he therefore melted them up for wax. However, he concluded that this was a rather expensive way of getting wax, and he now feeds sugar syrup to the bees for winter stores. He either has combs filled earlier with sugar syrup, and shakes the bees upon them after the frost has stopped the honey-flow, or he shakes the bees upon empty combs, and in an empty super or body underneath he puts an open feeder with warm syrup. Even in pretty cold weather the bees, feeling the heat from the warm feeder underneath, will store the syrup for winter.

This fall I fed syrup made by stirring 2½ parts by measure of sugar into one of boiling water, adding a teaspoonful of tartaric acid to every 13 lbs. of sugar. Such sugar does not require much evaporation; and if the brood-chamber is contracted so the bees will cover their combs and stores they will be in the very best condition for winter.

Of course, we should all have an ideal. Circumstances, such as lack of time, may prevent us from doing what we know to be best. All we can do is to aim at the ideal we have set before us.

GLEANINGS FROM OUR EXCHANGES

By W. K. MORRISON

THE CONSUMPTION OF BEESWAX IN FRANCE.

According to the *Revue Eclectique d'Apiculture*, of Paris, there is a large production and consumption of beeswax in France. In round numbers the annual production is about 2,000,000 kilos, or 4,400,000 lbs. The importation is over 250,000 kilos, or 550,000 lbs. The imports are contributed by Spain, Dominican Republic, Turkey, Low Countries, Japan, Haiti, Cuba, Madagascar, Algeria, Tunis, Morocco, French Indo-China, French Protectorates, and various foreign countries. The maximum tariff is \$2.40 on 220 lbs., and the minimum \$1.60 per 220 lbs., or less than one cent a pound on the average.

MORE ADULTERATION.

Not long ago the national pure-food inspectors seized 1656 cans of adulterated molasses at Memphis, Tenn. It was marked "Early Bird Brand Sugar House Molasses," put up for W. C. Early & Co., Memphis, Tenn. On analysis by the Bureau of Chemistry it was found to be nearly 50 per cent glucose, and therefore misbranded. An action was commenced in the western district United States Court for Tennessee; but the defendants decided to waive a trial, and allowed the goods confiscated by the Department of Agriculture. A curious feature of this case is that Early & Co. could have escaped the law by labeling their syrup "corn syrup," though it is composed of equal parts of molasses and glucose, and never saw "corn." If bee-keepers will look around the grocery stores in their neighborhood they will probably discover more cases of this kind. Of all offenders against the law, glucose is probably the worst. A kindly warning would put the grocer on his guard.

THE TARIFF ON HONEY AND BEESWAX.

The tariff is a two-edged sword—it cuts both ways. We now have a tariff on honey coming into this country, yet the price is lower in the United States than it is in England, which has no tariff. France also has a tariff, and the price is lower than it is in England. Beeswax is higher in price all over Europe than it is here. In England I should say the price (on an average), judging by the market quotations, is about 5 cents higher than here. Why is this so? I think it is due to the higher esteem in which these products are held on the other side of the herring-pond.

Large amounts of paraffine, ozokerite, Japan wax, and other substitutes for real beeswax, are used in this country, and this has a tendency to make lower prices. It therefore strikes me very forcibly that no tariff on beeswax will be effective unless there is an equal or greater duty on substitutes for beeswax. Personally I should like to see a heavy duty levied on these substitutes. In most instances they are used to keep the price of beeswax down. Let us not launch a boomerang by asking for a tariff before the substitutes are dealt with.

THE PURE-FOOD LAW.

Dr. Wiley recently stated to the Sphinx Club, of New York, that obtaining purchasers for adulterated food came within the purview of the officers charged with the enforcement of the pure-food law. It is presumed the matter of misleading advertisements will be taken into consideration in making out a case against a violator of the law. This will to some extent prevent quibbling about the label. For example, some dealers in groceries still advertise "California Honey Drips," conveying the impression to the unsophisticated buyer that he is buying strained honey from California, when, as a matter of fact, it is neither more nor less than our old enemy glucose masquerading under another name. It is to be hoped every reader who sees this will call the attention of the pure-food authorities to all violations of this nature that in any way affect the honey business. A little missionary work of this kind will help up the price of honey all over this broad land. The word "honey" is the property of bee-keepers and no others.

A CONTESTED DECISION.

They have legal squabbles in France as well as in this country over runaway swarms. In the August issue of *L'Apiculteur* a Miss Brunet criticises the opinion rendered by a justice of the peace in the third canton of Brest. However, in the November issue the editor, after a careful study of the case, comes to the conclusion that the judge was peculiarly fit for his work, and his verdict unattackable. Briefly this was his decision:

1. To maintain his property rights the owner of a swarm must pursue it very closely if it leaves.
2. The rightful claimant is the one who saves it.

Most Americans will agree that this is good sense if not good law. This seems to be the essence of the judge's opinion, who took the law of 1889 as his guide in the matter. The editor thinks it would be a good thing to have the opinion of the Court of Cassation on a case of this kind. The latter is similar to our Court of Appeals or the Supreme Court.

THE VALUE OF CERTAIN FOODS.

Some wonder why honey prices are higher in Europe than in America. The reason is not far to seek. The inhabitants of nearly all European countries value honey higher than we do, and are, consequently, willing to pay better prices. Fine grades are strongly competed for, especially by the well-to-do and rich. It is not so in this country to the same degree. One seldom sees honey on the tables of the best hotels and restaurants in the great cities, even when the proprietors send to Europe for all kinds of dainties. Some foods are overestimated. Oysters are thought by many to be very nourishing, when, as a matter of fact, they are poor in nutrition. Eggs are often overestimated. Cheese is usually underestimated. Milk is underestimated by most people in America, and Europe too. Meat extracts may not be nutritious, though many persons think these things must be extremely valuable as food. Honey has the merit of being very

nourishing, and at the same time very palatable, causing it to be well received by the digestive system. It is not spoiled in cooking as many good foods are.



SWEET CLOVER COMPARED WITH OTHER CLOVERS FOR FEEDING STOCK.

That great journal, *Hoard's Dairyman*, of Ft. Atkinson, Wis., in its issue for Nov. 13, contains a striking editorial on sweet clover. Briefly, it is a *resume* of what had formerly appeared in that journal by Prof. Ira M. Buell, of Beloit College, Wisconsin.

The editors say there is a close connection between clover, alfalfa, and sweet clover, not only botanically but chemically, as an analysis taken from the "International Encyclopedia" will show. Here it is:

	In the green growth.		
	CLOVER.	SWEET CLOVER.	ALFALFA.
Water	70.8	76.5	71.8
Protein	4.4	2.8	4.8
Fat	1.1	0.4	1.0
Nitrogen, free extract	13.06	12.1	12.8
Crude fiber	8.1	6.6	1.4
Ash	2.1	1.6	2.7
	In the dried state.		
	CLOVER.	SWEET CLOVER.	ALFALFA.
Protein	14.9	12.0	13.7
Fat	3.8	1.7	3.6
Nitrogen, free extract	44.3	51.4	46.2
Crude fiber	27.1	28.9	26.7
Ash	7.1	6.8	9.7

In these tables the sweet clover comes off as slightly better than either clover or alfalfa as to food value. As a matter of fact, its rank taste is largely due to an excess of nitrogen as compared with its fat and ash content.

RELISHED BY STOCK.

Hoard's Dairyman is fair, however, and says that the young growth is quite palatable, and resembles asparagus. The taste depends largely on condition and seasonableness; that is to say, it must be cut at the proper season—a rule which applies to other crops as well. It also says, however, that sweet clover is somewhat repellent at first, especially to cows, but is usually easily overcome, so that it is greatly relished. Horses are said to be especially fond of it.

ITS DISTRIBUTION AND HISTORY.

As to its distribution and history, the *Dairyman's* knowledge is very full. Its native home is Central Asia, so that its cradle is the same as that of the human race. Homer, the great poet, noted it growing on the plains of Greece and Asia Minor, and he tells us that the horses of the Greeks were fed on it at the siege of Troy. It is said to be still raised in the East, being grown in the same manner as alfalfa—by irrigation—and used for the same purposes. The name, "melilotus," means "honey-blossom," and is common to both the Latin and Greek languages. Pliny wrote very accurate accounts of it, telling of its uses and distribution, and gave a more extended description of it than most of our botanists. In his day it was highly esteemed as a honey-plant and as a medicine, and even now it is highly valued as such by Europeans.

OTHER SPECIES.

Other species of melilot are also prized in Central and Southern Europe. In Switzerland the fine flavor of the dairy products is largely due to the presence of sweet clover in their pastures.

Long ago Asa Gray showed that, in its new home, sweet clover showed a striking increase in strength and vigor. This shows its adaptability to new conditions.

As regards its use as a fertilizer, the editor closes with this significant paragraph:

The use of the bacteria-supporting legumes for the maintenance of the fertility of our farms is one of the most promising fields for agricultural experiment. It is well to know that we have right at our own doors the most hardy, rank-growing members of this class, and one that promises the largest increment of fertilizing matter from its growth.

Now where are the people who say sweet clover is a *weed*?

BEE-KEEPING AMONG THE ROCKIES.

By WESLEY FOSTER.

Mr. Scholl, you say in the Oct. 15th issue that comb honey goes at double-first-class freight rate. Comb honey takes the first-class rate when the glass is protected. Tack a separator over the glass.



LOCATING AN APIARY.

A dry knoll covered with buffalo grass, and above irrigating-ditches, is my favorite choice for a bee-yard. There are no weeds to cut, nor is there any danger of being drowned out by some careless irrigator. The swarms usually alight on one of the fence-posts, and are quickly seen. There is one serious objection to a knoll; it gets all the wind, and we have *wind* out here in the winter. When the farmers burn the grass along the ditches the fire often gets away from them, but there is little danger if the apiary is on a buffalo-grass plot, for there isn't enough grass to set a hive on fire, ordinarily.



RETAIL PRICES OF HONEY IN COLORADO, ESPECIALLY DENVER.

No. 1 white comb honey retails at 20 cts. per section, or 2 for 35 cts.; No. 2 and poorly graded goods bring 15 cts. Some cull honey sells at 12½. Extracted honey in glasses holding from 5 to 8 oz. sells at 10 cts.; ½-pint jars bring 15 to 20; pint jars retail at 25 to 30. There is considerable honey in 1-lb. jars (some with a piece of comb inserted in the honey), selling at 25. Seven or eight carloads of comb and extracted have been brought into Denver, and I think the market here is very well supplied.



COLORADO STATE BEE CONVENTION.

The Colorado State Bee-keepers' Association is to hold a convention, "a round-up," and a lot of new honey-money-making ideas are to be roped, tied, branded, and taken home to be put into practical operation by any who can fall into the fellowship feeling of a round-up, and can tell a young unbroken well-bred bee idea when they see one. We will meet at the American House, Denver, Dec. 8, 9. This convention will not be quite as long as usual, but there will be less chance for good ideas to take to tall timber between sessions. All are asked to send in

questions on which light is wanted; and, as one of the program committee, I will try to find some "live wire" bee-man to furnish the power.



LECTURES AT FARMERS' INSTITUTES.

Pres. Collins, of the State Association, has been engaged to lecture before the Farmers' Institutes conducted throughout the State by the Agricultural College located at Fort Collins. Mr. Collins' subject is "Bee-keeping for Profit." He will do a great deal to raise the standard of bee culture in the State and the West. The bee-keepers certainly appreciate the work the College is doing for their benefit; and Prof. Gillette, who initiated the work, is to be thanked for his interest along this line. Mr. Collins is well fitted for the work. He is a forceful public speaker, arousing interest quickly, and he has made a success of bee culture.



COMB-HONEY GRADING, EASTERN AND WESTERN.

I agree with the editor that the illustration of comb-honey grading on page 1316 is interesting. Now, according to the rules adopted by the Colorado State Bee-keepers' Association last year, the top case and section would be in the No. 1 grades, either white or light amber. The middle section is not evenly capped. The unevenness was likely caused by a lull in the honey-flow while the section was being filled. This unevenness would place the middle case in the No. 2 grade. I have not mentioned weight here, for I can not tell weight from a picture. The lower section is not sufficiently capped to be put in any grade, and would be called cull honey. There are over one hundred unsealed cells on the visible side of this section, exclusive of the outside row. I infer that the sections represent the contents of each case beside which they stand.



CROWDING BEES TO SECURE ENTIRE CAPPING OF SECTION HONEY.

I would not say it is practicable, that it pays, or that it is very necessary to crowd the bees to secure better capping of honey. Tiering up supers, if understood, will result in much of the honey being capped as is the top case in the illustration on page 1316, Nov. 1.

The editor says the tendency is to boost the gradings, putting them a little higher than they deserve. Conscientiously following the rules, and when in doubt putting the doubtful section in the lower grade, will start the tendency toward the other and better way.

DROUTH INCREASING THE FLOW OF NECTAR.

I notice occasional reports of short crops on account of drouth. The season of 1908 is the driest I have ever known, and yet I averaged 133 4x5 sections to the colony, which is the best yield I ever had. At the beginning of the season I had given up all hope of much surplus; but as the weather continued dry the bees kept working until the aster and goldenrod ceased to blossom. I can't see that the drouth had any effect except to increase the flow.

Ashtabula, O.

THOMAS CLARK.

GENERAL CORRESPONDENCE

WHAT HIVE TO ADOPT.

A Discussion of the Merits of Different-Sized Hives, Taking into Consideration the Man, the Methods, and the Locality.

BY E. D. TOWNSEND.

Continued from last issue, page 1372.

The size of a hive is much more important than the shape. A well-shaped hive is important only because it is more convenient for the apiarist. In outyards every hive should be the same, for a variety of sizes and shapes is an abomination. I have had experience with different sizes; but every one of my extracted-honey colonies is now in a ten-frame factory-made Dovetailed hive, and every super is the same as the lower story or body, so that all are interchangeable. I use ten Hoffman frames in the bodies, and eight loose hanging frames in the upper stories, the eight frames in the ten-frame super making 1¾-inch spacing, so that all combs are bulged.

Mr. J. N. Harris, of St. Louis, Mich., has two or three outyards in the northern part of the State. A part of the colonies are in eight-frame hives, and the rest in twelve-frame, these twelve-frame hives being the only ones I know of in the locality. Mr. Harris is an old veteran at the business, and he is very thorough in his work with his bees. For instance, every comb that he has is built from wired foundation; and if it happens there are too many drone-cells in any one comb, that comb is replaced with a full sheet of worker foundation. Now, if he goes to this trouble to keep his combs in good condition, it is evident that all the other work around the bees must be done in the same thorough manner. Since he winters the eight and twelve frame colonies in the same cellar, and manages them through the season as nearly alike as possible, Mr. Harris is in position to tell which hive is the best to adopt with his system of management in his locality, especially as he has only one object in view—the securing of the most extracted honey with the least expenditure of labor and expense.

Mr. Harris says that colonies in the twelve-frame hives go into winter quarters with more bees than those in the eight-frame hives, and also that they come out much stronger in the spring. He has found that he can count on having about eight combs of brood in the twelve-frame hives, and only six in the eight-frame; so that the twelve-frame colonies have about 25 per cent more brood than the eight-frame. I wish Mr. Harris could have tested the ten-frame hive in connection with the eight and twelve frame, for it would seem to me that if he got 25 per cent more brood in the twelve-frame colonies than in the eight-frame, then the ten-frame hive with the same management should give him only one comb of brood less than the twelve-frame, and one more than the eight-frame. The best point in favor of the twelve-frame hive is that it is so large that he does not need to do so much "fussing" with them as with those in the smaller hive, and he is

able to attend to more colonies, getting more honey per colony. He keeps all the colonies he can attend to himself, instead of depending on any help to care for a larger number. Mr. Harris has used fifteen and sixteen frame hives; but he could not see that they offered any advantage over the twelve-frame size, while they had many disadvantages.

Twenty-four combs filled with honey and brood will cost the same, whether coming from two twelve-frame hives or from three eight-frame hives; and there is not very much difference between the cost of the two twelve-frame hives and the three eight-frame hives. Mr. Harris says that he secures the same amount of surplus honey from three eight-frame colonies, which, at a given time previous to the honey-flow, have five combs of brood each, that he secures from two twelve-frame colonies each having eight combs of brood at the same time before the honey-flow. Now, as he has said that he can produce six combs of brood in the eight-frame hive to eight in the twelve-frame hive, it will be seen that the eight-frame hive is still ahead, taking into consideration the number of frames in the hive. In other words, it would take fewer bees to gather the honey in a given locality in the eight-frame hive than in a twelve-frame. If I were selling bees I would ask about the same money for 60 or 65 colonies in twelve-frame hives that I would for 90 colonies in eight-frame hives; and the surplus-receptacles for each lot would probably sell for about the same.

The Langstroth frame being the standard, I think that eight Langstroth frames make a small hive; twelve make a large hive, and ten a medium one. Other things being equal, a two-frame nucleus in proportion to the number of combs it contains will store just as much honey as a colony in an eight-frame hive, and considerably more honey than a colony in a ten-frame hive, and, of course, much more yet than a colony in a twelve-frame hive. This comparison is based on the ability of the queen to keep the different sizes of hives stocked with eggs, and on the disposition of the workers to take care of the eggs and brood afterward. An ordinary queen will fill a ten-frame hive with brood; but it is rare that a queen will use all of the room in a twelve-frame hive. Bees on ten frames of brood will store the same amount of honey whether the brood is all in one hive or divided into two parts and in two hives. It will be seen by this that the number of combs of brood and bees we have at the beginning of the surplus-honey flow determines the amount of honey that will be brought in, regardless of the size of the hive. Generally speaking, the smaller the hive the more honey will be placed in the super.

After satisfying myself that the eight-frame hive was large enough for the average queen, I made up my mind to use the ten-frame hive, the two additional frames being principally for honey. Although these two extra frames may contain brood in some cases, they were usually filled with honey and comb—a reserve fund, so to speak; and with this reserve on hand our colonies will not have to be watched as closely in regard to stores, and are thus better equipped for out-ward service, where they may be left by themselves at quite long intervals at times.

It is possible for the expert honey-producer to make a fair success with almost any size or shape of hive, and in almost any location; but it is very convenient to have the hive conform to the system that is best for the special location.

Remus, Mich.

THE ARGENTINE ANT.

A Possible Pest of the Apiary.

BY RALPH BENTON.

Assistant Entomologist, University of California.

What we have to say in regard to the Argentine ant as a possible pest of the apiary is necessarily somewhat in the nature of a conjecture, since we have not yet been able to locate within the infested areas of the State any apiaries of commercial size upon which to make observations. There are upon record, so far as we know, no extended observations upon the effects of the inroads of this pest in Louisiana and Mississippi upon the bee-keeping industry of that region. Knowing of his interest in bee-keeping matters, we have written to Professor Newell upon this subject, but have not yet heard from him in reply.*

Meanwhile we have had under observation for several weeks past in the infested area in East Oakland two small apiaries, both of them not far from the seat of the University investigations, the Oakland formicary. The first of these apiaries consists simply of two colonies of bees in frame hives located in a vacant lot, and placed some two feet off the ground on a bench. There are at the present time no traces of ants in or about the hives, and the only clue that we have that ants have troubled them is that one of the colonies is quite weak, coupled with the fact that the legs of the bench have been placed at some time in cans filled with water or oil. The second apiary consists of some half-dozen hives ranged out on a bench some 18 inches off the ground beneath several spreading and low-hanging lemon-trees. Upon examining the citrus trees it was found that they were well infested with yellow scale, and that myriads of Argentine ants were passing to and fro upon the trunks and limbs of the trees. The apple-trees in the immediate vicinity were also examined with similar results—myriads of ants colonizing and caring for an extended infestation of woolly aphids.

On approaching the colonies of bees, and examining them more closely, we found numbers of ants busily going and coming, as is usual with

*Since the preparation of this paper, Professor Newell has been heard from. He writes that he has not had any experience with the pest in question in large commercial apiaries; but further that, to his knowledge, several parties keeping bees in a small way in New Orleans have entirely given it up, finding it impracticable to protect the bees successfully from the ants. His own personal experience is significant, of which he writes as follows: "I have six colonies of bees here at Baton Rouge, and have had occasion to notice the vigorous manner in which the ants attack the larvae in the hives and carry away the stored honey. Thus far I have protected the colonies by placing each colony upon a stand having four legs, each leg being placed in a dish of water. This water has to be renewed every few days unless there are continuous rains, for the ants will cross it as soon as any scum or dust film appears upon its surface." This experience of Professor Newell's, if any thing, puts a more serious face upon the Argentine ant as a possible pest in California, for here we have commercial apiaries that will be inevitably invaded unless heroic measures are taken by the State, looking toward restriction or eradication.—R. B.

them, in regularly established ways. They were seen to be patrolling all crevices, and were quite active about the entrances to the colonies. Whenever the ants and bees came in contact the latter appeared very excited. This excitement was manifested by an incessant buzzing of the wings, emitting a peculiar note on the part of the bee indicative of her irritated yet helpless condition. The ants boldly approach the bees as the latter seek to patrol the entrance or other opening, and, catching the bees by the legs, wage an assault. The bees, enraged, frantically keeping up their buzzing, helplessly run about in an effort to release themselves, frequently being forced to take to their wings before being able to ward off the attacks of their little adversaries. So far as I was able to observe, the general appearance being to the contrary notwithstanding, the bees in all cases were holding their own, the judicious caution of the ants leading them to refrain from actually entering and invading to any great extent the colony. Subsequent examinations of the interiors of the colonies have confirmed this observation. In one colony the ants had established a regular runway across the bottom-board of the hive, but in only one instance were ants to be seen crawling on the combs of one of the colonies of bees, and then only two ants were observed making their way along the lower edge of a comb.

One of the colonies, perhaps unfortunately for itself, but certainly fortunately for the purpose of my observations, contained several extended crevices half an inch or so in width across the corner. As might be expected, the bees had tried to fill these crevices with propolis and wax quite as likely in defense against robber bees as perhaps against the ants. There were, however, a sufficient number of openings to permit of the egress of bees which were continually passing out and irritatedly buzzing as previously described. On removing a wedge from one of these crevices, thus enlarging the opening, the colony immediately threw out an extra force of police bees in defense against the ants; but, to my surprise, these bees did not seem angered toward me. In fact, I used every reasonable means to anger them individually, going so far as to pin them down to the hive-cover with my finger, all of which only apparently contributed to their antagonism against the ants. This, I say, was surprising to me, for it was somewhat contrary to my previous experience with bees when antagonized by ants.

When in charge of the experimental work in apiculture at the Montana Agricultural Station during the years 1901 to 1905, on several occasions the apiary became troubled with ants. One summer this was particularly true, and we observed the ants, which, of course, were much larger than the Argentine ant, catch and literally cut up live bees about the entrances and carry them away to their nests. This so enraged the bees that it was almost impossible to work with them, and for this reason rather than from any particular fear that the ants might overcome the bees, we resorted to the use of carbon bisulphide in the nests, which had been steadily growing until the entire apiary, which was, of course, a small one (less than fifty colonies), was encircled. This proved itself an effective remedy against the ants in question; but in the case of the Argentine ant

the lack of a centralized nest or colony, coupled with its migratory habits, of course makes such a remedy hard of effective application.

From the data here presented, which, of course, is not very extended, and so can not be regarded as conclusive, it would seem that the danger of the Argentine ant as a pest in the apiary would in most instances lie in their interference with the work of the bees rather than in actually overcoming and destroying strong colonies. Fortunately it is the habit of the bees to store their honey as remotely as possible from the entrance of the colony; and if the bees are kept in well-made hives in which there are no crevices for entrance on the part of the ants, a strong colony can undoubtedly defend itself, there being an ample number of bees for the patrol of the entrance. It may be true that, in the case of very weak colonies, incapable of defense, the ants might be able to gain an entrance, and thus destroy, starve, or force the bees to vacate. Indeed, there is one and perhaps two empty hives in the apiary, under our observation, which might lead one to this supposition. The apiary, on the other hand, is a neglected one, and there may be other causes for the loss of the colonies in question. On examining these empty hives we were somewhat surprised to find in one of them sealed honey alike undisturbed by the ants or robber bees. This condition of affairs might be due, however, to the fact that the honey cited was granulated, and so in a measure inaccessible. In any event, from present evidences we can not feel entirely safe in attributing the loss of these colonies to the Argentine ants, although the ants may have been a factor. We believe that the ants might and do become troublesome enough to the bees of an apiary to interfere seriously with the field work of the bees, and so prove themselves the cause of almost inestimable loss to the bees and apiarist alike. A fact readily appreciated must also be borne in mind—that the annoyance and even injury so persistent a pest as the Argentine ant would accomplish about the honey-house and shop of an apiary would be considerable. This would be especially manifest in the handling and storage of honey, particularly in the event of the production and care of comb honey. We have known of apiaries in this State where the common black ants have been very troublesome about solar wax-extractors, necessitating the placing of the legs of the extractor in cans of oil. It is needless to conjecture what the Argentine ant might do or become under similar conditions. In any event it must be remembered that our California infestation of the Argentine ant is as yet largely in the stage of simply a household pest, and that, when the acute stage of the infestation of orchard and field, found now in Louisiana and Mississippi, is reached on this coast, our attitude toward the Argentine ant as a possible pest of the commercial apiary may be changed. The development and growth of our ant problem is one which every apiarist in common with the orchardist and agronomist ought to and will watch with interest.

[These ants have been described in *GLEANINGS* before by Mr. O. O. Poppleton and myself. The remedy is to put the hives on benches, the supports of which are set in a pot of tar. There are only a few places in this country where these ants will prosper—that is to say, in sub-tropical sec-

tions. I doubt if they will do any real harm. They will kill off all wild bees, and apiaries poorly attended to will suffer. They are carnivorous ants to a great degree, preferring a meat diet, but will eat sugar, honey, grain, etc. They like a larva in preference to an old bee, hence they make desperate onslaughts on the bees till they get at the brood. Possibly they are a blessing in disguise.—W. K. M.]

BEE-KEEPING IN RIO GRANDE DO SUL, BRAZIL.

Much Loss, Probably Caused by the Honey from the *Herva Lanceta*; Some of the Enemies of Bees.

BY A. L. GREGORY.

The last season here was hard on bee-keepers, at least in many places. The writer, for example, secured some pure Italians and got them off to one side and began raising queens. All went well until near the middle of our summer when dry weather set in. We did not fear that, however, as the catclaw gives bloom right along; but there is a plant here called *Herva lanceta* which we have nicknamed "Brazilian goldenrod." This soon began to bloom; then we noticed that our bees began to die. Soon we found some dead queens; then more disappeared, until the hives became weak from loss of bees and queens; then our hopes went down to the zero-mark. When a queen died, the bees would try to raise another; but finally they all had to die. Each hive was left with more or less honey in it, so we extracted this, which tastes excellent, and does not make us sick. We noted that there was no disease in the brood; but when young bees hatched they soon died, or got so weak they could not walk straight, then died.

In our vicinity (near Santa Maria) all bee-men fared badly. One old German who had 39 hives now has 3; another, with movable frames also, had 62 hives and lost 57. We could cite case after case where bees died leaving hives full of honey.

When a hive got to be sufficiently weak, then the little black wasps and small black bees which we call *irapua* (described below) would come by thousands and attack the hive, actually laying hold on Miss Apis Mellifica and dancing her out of her home.

Bee-keepers have noticed for some years that, when the *Herva lanceta* blooms, there have been some losses in the apiary; but they have never experienced as much loss before. Where the writer had his Italians there was much of this *Herva lanceta* in some thrown-out land, hence the loss in his case of all he had. There remains much to be studied in this thing; and as the average Brazilian is too much at his ease to exercise himself about such small matters, it remains for foreigners to put themselves to the task.

There are other theories for this year's loss. One is that the locusts, which ate every thing in the spring, left a poison behind. Another is that the red bee-louse killed them; but these were very few, so could not be the cause. Some of the best bee-men are free to confess they do not know

the cause. The writer thinks it was the *Herva lanceta* that caused the loss in his case.

Bee-keeping is at a low tide in Brazil, though now the governing powers are trying to interest the common people in this marvelous industry in which there are not only dollars and cents but pleasure every day of the year.

The climate in this most southern State is about like that of South Texas. Seldom do we have more than half a dozen frosts a winter, and these are usually in July and August, the latter of which is our most disagreeable month. The poor Brazilian women have a saying that they would like to be dead during this month. We suppose they mean they would like to hibernate during this month as does Mr. Bear.

THE IRAPUA* BEES OF BRAZIL.

These small, black, long-legged bees mentioned above are not provided with a sting as are bees in general; yet they are not without a means of defense, being given by the Creator a strong jaw. They catch hold of the enemy like the ant, for example. They carry on their hind legs a sticky secretion which, coming on the wings and legs of the insect antagonist impedes locomotion and prevents flight. The *irapua* makes its nest usually in a small bush near the ground. The shape is somewhat like a big gourd inverted. The composition is the same as a wasp-nest, but has compartments and several entrances. The honey is stored in round cells the size of a hen's egg. The writer has not much love for the honey, as the bees will visit any carcass; and from the hundreds which go there it is clear they carry something away with them. This bee is one of the enemies of our honey-bee when the hive becomes weakened. When they decide to attack a hive they come by thousands and boldly enter, catch the honey-bees by the leg or wing, and drag or chase them out of their hive, take possession, station sentinels, and begin carrying out the honey. They even stay in the hive over night, so sure are they that "might makes right." One of these little insects is more than a match for Miss Apis Mellifica in a knock-and-scramble combat. Many times has the writer seen a honey-bee pulled out of its hive, glad to fly away from the intruder and victor. Sometimes one may see a dead *irapua* hanging to a shy apis.

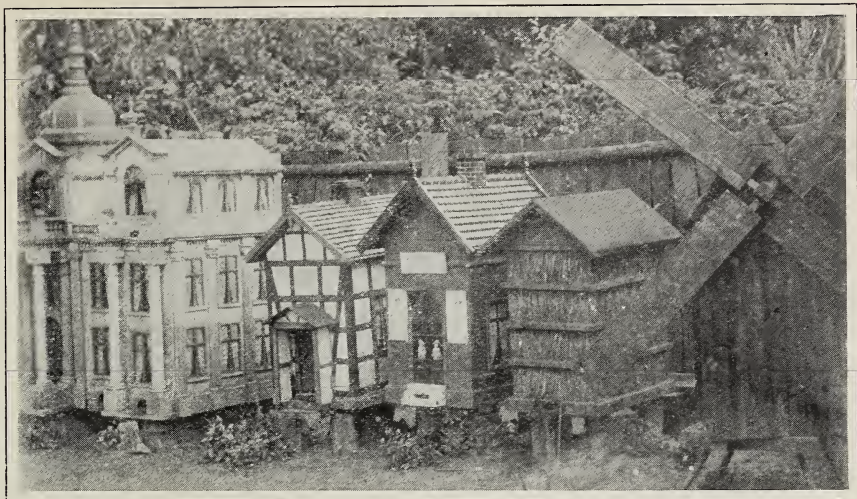
There is also another enemy to our bees in the small black wasps. These, however, are not so bold as the bees we have described. They also build a paper nest resembling that of the hornet, divided into many parts, and store honey in the same cells in which they raise their young. We have other bee-enemies, such as the dragon-fly, and many kinds of birds and ants.

The bee business can, notwithstanding all these enemies of our little pets, be made profitable by the painstaking bee-man, of whom we need a host in our big Brazil.

Taquary, Rio Grande do Sul, Brazil.

[South Brazil can do big things in the bee line when conditions favor. As to tropical Brazil, that's another matter. *Apis mellifica* is subject to too many enemies to be a great success. The stingless bees have the American tropics pre-empted.—W. K. M.]

* Accent on the last a.



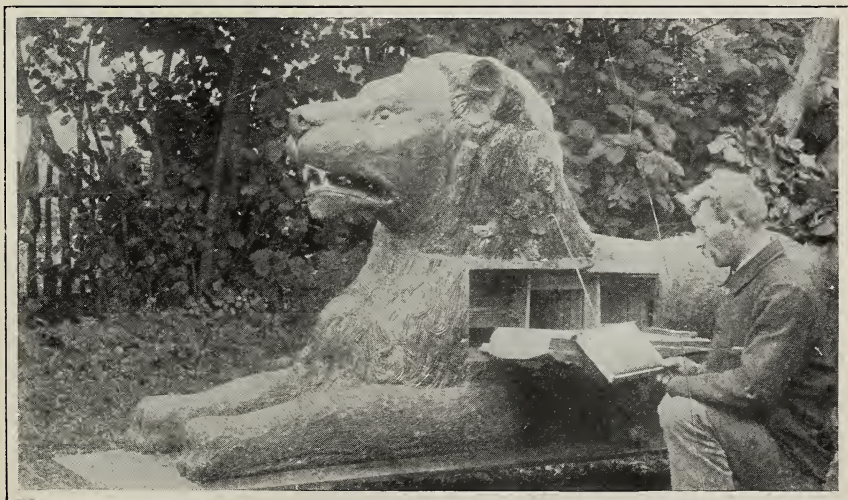
CURIOUS HIVES MADE BY A GERMAN SCHOOLTEACHER.

—*Courtesy of the Independent.***NOVEL BEE-HIVES.**

BY MAX A. R. BRUNNER.

Germany is known for the numerous beer-gardens found in every city; but one little place contains a bee-garden instead of a beer-garden. It is entirely the idea of its owner, a schoolteacher, who has also executed the many houses in it, although he has not, of course, any experience in it through his profession. As can be seen, the bees do not live in the ordinary hives; but in finely modeled houses, each representing a different type.

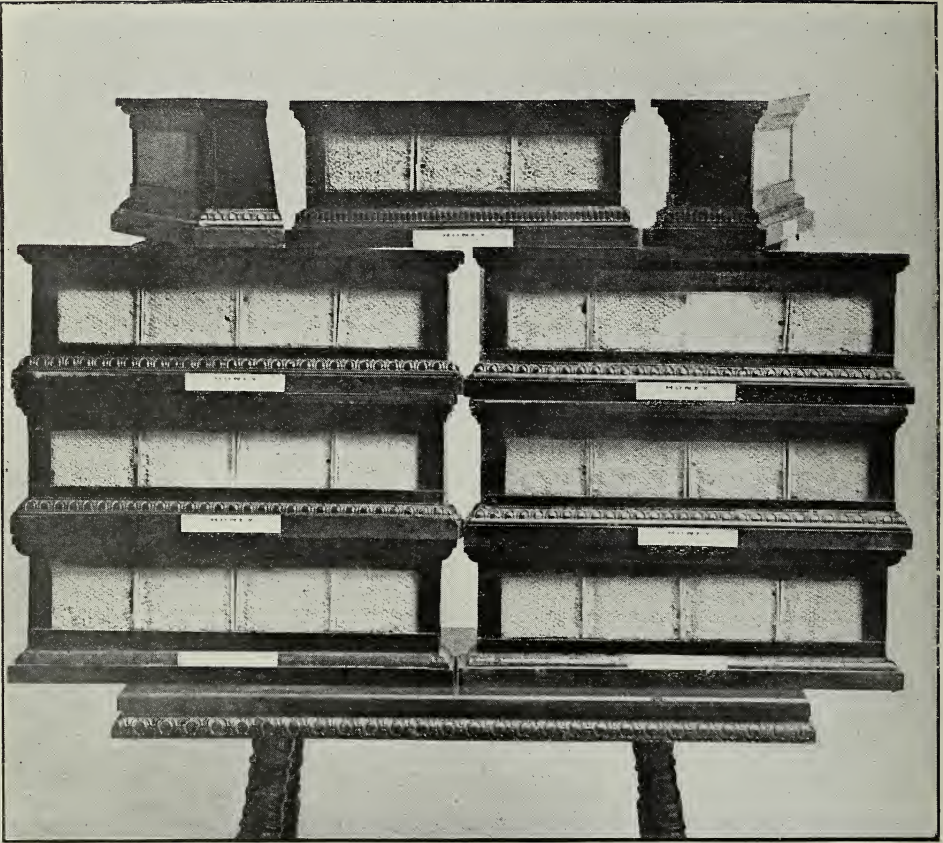
It is a fact that bees always return to the same hive, which they recognize by the color, form, or shape of opening. To facilitate this searching for their residence the hives are often of different color and size. In this garden this has been carried on to the extreme, for every hive represents a different shape. Among the buildings are a fine castle, with sentry, a dwelling-house, an inn, and a windmill. There are also men and animals, carved in wood, all in the service of the bees. There is, of course, an opening in all these models, to give access to the interior for taking out the honey.—*The Independent.*



A COLONY IN THE BODY OF A WOODEN LION.

—*Courtesy of the Independent.*

Out of the eater came forth meat, and out of the strong came forth sweetness.—JUDGES 14:14.



EXHIBITION CASES FOR DISPLAYING COMB HONEY IN STORES.

SELLING COMB HONEY.

Some Inducements to Help the Merchant Dispose of his Stock; a Simple and Neat Exhibition Case.

BY D. R. WAGGONER.

In considering this subject it is assumed, of course, that the bee-keeper has carefully cleaned his sections from propolis and burr-combs; has graded them as to color, weight, and quality, and has them all cased in regular shipping-cases ready for market. The neighbors who come to the apiary to buy can be shown into the honey-house, where the crop is piled on shelves in cases, to select what they want themselves; but only a small part is sold in this way. We must go around and take orders for our product from merchants and others, and sell by sample.

In order to do this I take along with me a small shipping-case, holding not over twelve sections, to show customers in what style it is put up for sale. A smaller case will do just as well, and is lighter to carry. I also have a small box, or case, holding six sections, showing three on a

side, through three-inch glass. I put the lightest-colored honey to show through one glass, and a darker grade, if I have it to sell, to show through the other glass. This little box is made perfectly plain, without any fancy molding, like a shipping-case, of thin stuff, and is stained a dark oak color, and varnished. The honey looks better and whiter in a stained and varnished case than in the regular shipping-case. It is better to have the light and the darker honey show through glass on opposite sides of the little case than to have the two sorts show through the same glass side by side. Also the dark honey will sell better by having it arranged in your sample case so that, when you hold it up between yourself and the window, the light will shine clear through the case, and your customers will see that even dark honey is not as dark as they imagine.

When I sell to merchants in my home town to retail again by the single section I have small showcases, each holding from four to six sections, to let their patrons know they have it to sell. The large shipping-cases can then be kept back on the shelf, covered up out of the reach of flies and dust. I generally supply the merchant with a showcase holding and showing four sections

through three-inch glass. Every season I furnish each of my home-town merchants, who sell my honey, with one of these show-cases; fill it for him out of one of the shipping-cases, and let him use it as long as he has any honey of my production to sell. At the end of the season, when the honey is all sold, I take the case home and keep it safe until the next season. The style of the showcase is to be seen in the accompanying picture. A label is pasted on each case, showing that the honey is from my apiary, etc.

When I sell to a merchant further away I furnish him a showcase free, provided he buys five 24-lb. shipping-cases of honey, and I let him retain the case permanently. These cases are more ornamental than the little sample box or case which I carry around with me when I solicit orders for honey. They are heavier, and have molding next the top and base, above and below the glass. The base is somewhat wider than the top, to lessen the danger of knocking the case over sidewise. The case is filled from the rear. A board fits into the back of the case behind the honey, and can be wedged in, or otherwise fastened, so as to hold the honey firmly in place. Small drip-sticks and paper are used as in the regular shipping-cases.

Cases to hold six sections, showing three on a side, through three-inch glass, are furnished merchants when they prefer them to those holding four sections each. Two cases of the latter style appear in the top row in the picture. The honey is put into the six-section cases from the top instead of from behind. The top board is loose, and small cleats are nailed on the under side of it to keep it in place so it will not slide off endwise or sidewise. Both styles of showcases are stained dark oak, and varnished.

The picture shows a county-fair exhibit containing samples from the crop of 1908, and an end view is given of one case of each style in the top row.

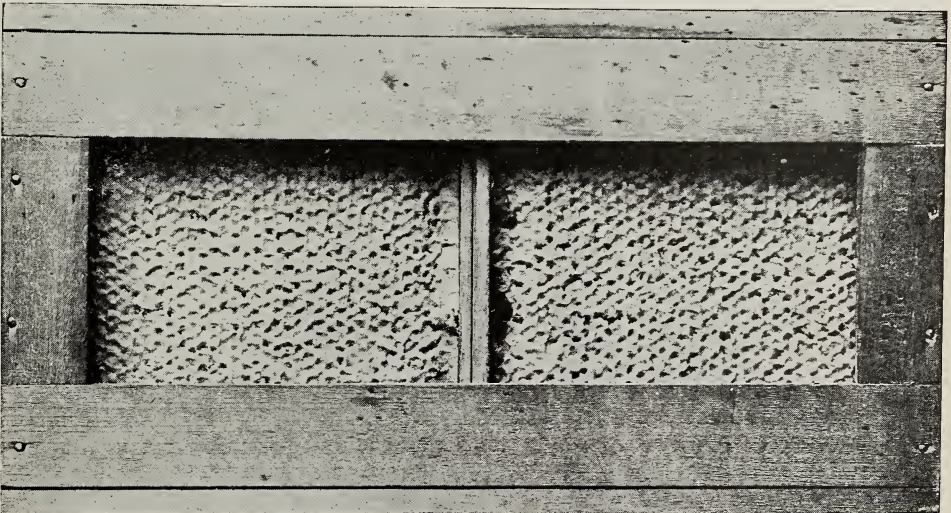
I have found that these little cases are an advantage, both to myself and to my merchant customers in selling honey. The merchants like them very much indeed. I have made all those I have used myself, though I am not a mechanic, and they have cost 25 to 30 cents each. I think it would be well for supply houses to furnish something of this sort to their customers, and keep them in stock, as comparatively few would care to purchase a showcase as expensive as the Sturwold, made by The A. I. Root Co. Stamford, Neb.

COMB HONEY TWELVE YEARS OLD.

BY E. R. ROOT.

The honey in the case here shown is said to be twelve years old. It is in a very remarkable state of preservation, to say the least. The cappings appear to be perfect, without break or drip. We can hardly think it possible for any honey to go this length of time without candying. Whether this did or not does not show. Granulated comb honey is likely to have breaks in the cappings; but a careful scrutiny of the engraving, taken directly from the photo, shows no such defect. Usually comb honey two years old is very inferior-looking, and a poor seller. For that reason we always advise disposing of it in the year in which it is produced, even at a low price if necessary; for after it has once candied it will not bring even as much as extracted per pound, for the reason that the average person does not know how to render such honey without spoiling the flavor of the honey at least, although we shall show in a future article how this *can* be done.

Some honeys will remain in a liquid condition much longer than others—notably Rocky Mountain sage. Any honey kept in a hot room of *uniform* temperature will remain clear much longer than that which is subjected to a temperature of



THIS HONEY IS TWELVE YEARS OLD; THERE IS NO CHANGE IN IT, AND, SO FAR AS APPEARANCES SHOW, IT IS NOT CANDIED.



BRITTON'S SHED FOR WINTER PROTECTION.

from 80 degrees down to nearly the freezing-point. We can only *guess* that this honey was kept in a favorable temperature, and that it is of a kind that does not candy readily.

WINTERING BEES IN A SHED.

Home-made Winter Cases.

BY E. C. BRITTON.

The illustration shows my colonies in their winter home, where they will need no further care until next spring. I have been feeding those that were short of stores, until all have food enough to carry them through the winter. I used one part of the best fine granulated sugar and one part water to make the syrup. Here in this part of the country the bees gathered no surplus honey last season in July or August, but gathered some in June and September.

The hives are the regular eight-frame dovetailed style. I made the winter cases just for the pleasure of doing it, and because I could try different kinds. The bottom-boards are 17×23. The outer cases are 16½×22¾, and 18½ inches high, so I can put on a super in summer and have both hive and super enclosed. The roofs are of different kinds—some hip, some common, four-sided, and shed, and are fastened on to the outside case with a small hook at each end. These cases give a half-inch air-space all around the hives, and on the top there is a super-cover; then a super filled with chaff, and finally an air-space under the roof. The entrances to the hives I reduced to ⅝×3 before putting on the winter cases. I have put them all in a shed, closed on three sides and open to the south. There are two rows, one back of the other, and a little higher up, so the bees get a better flight space.

To examine any of these hives I just push back the hooks at each end and take off the roof, then lift up the outside case, and the hive is exposed to view. They can each be taken apart in a moment. On warm days the bees can all take a flight, but I shall place a board in front of each

entrance in the front row, so the sun will not call them out when it is too cold to fly.

Canton, Mass.

[This shed, or, in fact, any open shed, serves only as an excellent wind-break. If the back and sides be closed it will cut off the wind in front, just the same as a buggy-top facing the wind stops the force of the blast against the face of the driver; but if the back curtain be up the wind will shoot right through. In all open sheds the back and sides must be closed. This is a very old idea of wintering, but a good

one.—Ed.]

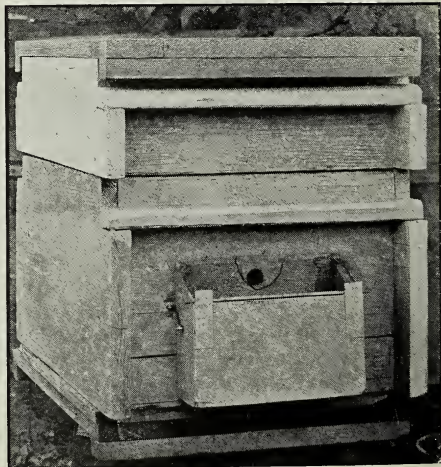
A FEEDER FOR THE BACK OF A HIVE.

BY ARENT BRUHN.

The photo shows my way of feeding bees. The box holds one quart, and is hung on the back of the hive. I can fill it any time, day or night. By means of the glass cover I can always see how much the bees have taken, and I then feed more if needed, or stop the hole and take off the feeder for another hive.

Enumclaw, Wash.

[Such feeders are used to some extent, a similar one, with the exception of the glass cover, being illustrated last year in our Sept. 15th issue, page 1212. The glass cover would be convenient but more expensive.—Ed.]



BRUHN'S GLASS-COVERED FEEDER FOR THE BACK OF A HIVE.

A CONVENIENT EXTRACTING-ROOM.

BY CARL H. HANSEN.

The arrangement of the extracting-room shown in the engraving is the most satisfactory that I have ever used. The extractor is more stable than I have been able to have it when placed on a box; furthermore, I find it easier to turn the machine when it is low down. The position of the honey-pail is a disadvantage; but if next season's crop warrants the expense I shall arrange to have the honey conveyed through a pipe directly to vats in the cellar.

The extractor is placed at the edge of the trap-door opening into the cellar. The honey, after being drawn, is emptied into large earthenware jars or into tin pails. The extracting completed, we wash the extractor, place a large piece of cheese-cloth over the top of the extractor-can, and fasten the cloth with a heavy cord. The honey is skimmed, and then strained into the extractor-can. After the bubbles of air have risen to the surface we run the honey directly into pint Mason jars, and finally put on the labels. We do not heat the honey, as our trade does not demand it. In fact, many prefer it in the candied state.

Madison, Wis.

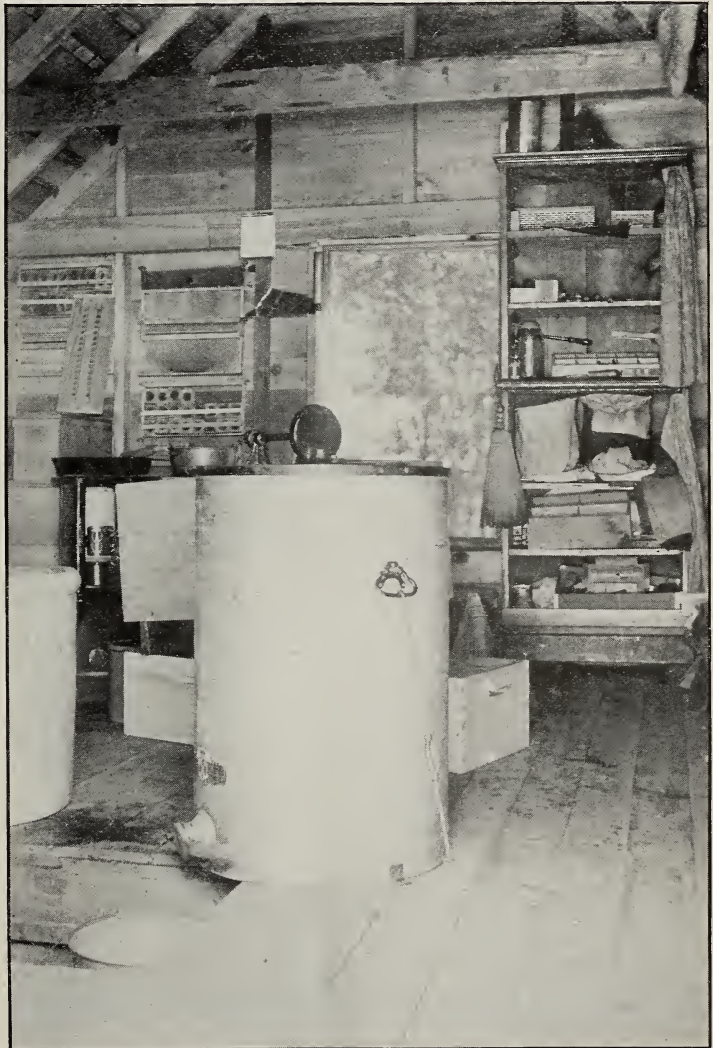
[The arrangement here shown is good—much better than an extractor set up on a box. One can better afford to cut a hole in the floor in which to put the pail, and, when the extracting season is over, cover it with a trap-door. A better arrangement, as suggested, is to run a tin pipe to convey the honey to a tank on a lower level. The trouble with running the honey direct into a pail is that one is likely to forget and let the honey run over and waste. Enough is lost in this way to pay for a tin pipe in a short time.—ED.]

ATWATER'S QUEEN-FINDER.

How to Use them with Sectional Hives.

BY E. F. ATWATER.

Years ago, when I was greatly interested in the divisible-brood-chamber (or sectional) hive, I gave a great deal of study to the methods best adapted to its management. From the late S. P. Cully, of Higginsville, Mo., I obtained the idea of the queen-finder, as shown in the engraving. It is simply a light box, about 7 inches deep, 20 long, 18 wide, having a rim of $\frac{7}{8}$ -inch sticks, nailed about two inches from the bottom, all around the inside. On this rim is nailed a large sheet of queen-excluding metal. Around the upper edge is nailed a strip of tin, projecting in-



INTERIOR OF HANSEN'S EXTRACTING-HOUSE.

ward $\frac{1}{2}$ inch all around. To use with the divisible-brood-chamber hive, after removing the cover from the hive drive a few puffs of smoke over and into the upper brood-case, which will usually drive the queen and the bulk of the bees into the lower case. Quickly lift off the upper case and set it aside. Pick up the lower case and place it on the queen-finder. Smoke the bees down, when a quick jar will send them into the finder. Many of the bees will at once pass down through the zinc, while the others will spread out over it and climb the sides of the box, where their progress is interrupted by the strip of tin.

Keep a sharp lookout, and jar or shake the finder to prevent the bees from passing over the upper edges, and to keep them from moving down through the zinc. The queen is usually seen in a moment.

With standard frames I prefer to find the queen by looking over the combs for her; but if she is not readily found, all the bees may be shaken into the finder, where the well-known "stride" of the queen makes her easily seen.

Meridian, Idaho.

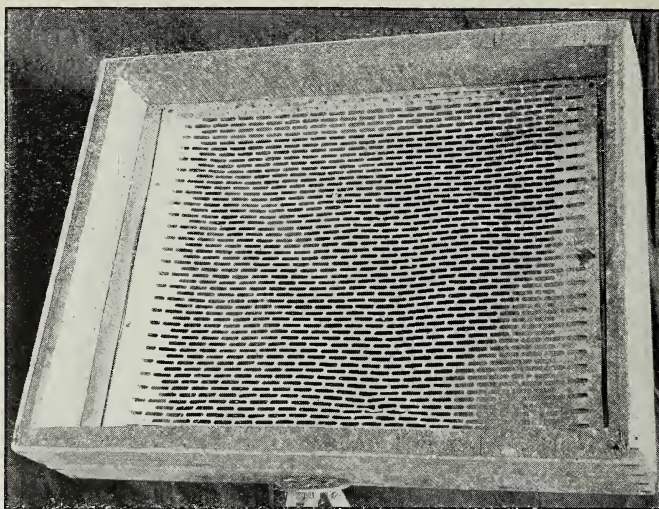
[This is a very serviceable device. It has been described in these columns before, and we wonder that it is not more generally used by the shallow-hive men. This is one of the handy things that can be made up during the winter for next season's use.—Ed.]

COMB FOUNDATION.

A Discussion of its Use in Frames; the Cause of Buckling; Thinner Top-bars and Vertical Wiring Preferred.

BY R. S. PENNELL.

We have always been dissatisfied with the top-bars of the frames. On account of the groove-and-wedge plan, they have to be made too thick, or at least this is the reason we assign. In our opinion the theory that this extra thickness hinders the formation of burr and brace combs is a fallacy; for as soon as the bees get the bars stained and propolized, they are no better than the thinner and narrower top-bars. The wedge and groove is the biggest nuisance that we have to contend with. It is not reliable if the frames are hauled to an outyard, in this climate at least, unless the wedge is secured with at least three nails. In forcing in the wedge the foundation is flattened so that all traces of the cell-base are pressed out. Now, the effects of this flattening on the foundation are just the same as if one edge of a



ATWATER'S QUEEN-FINDER.

piece of tin were drawn out with a hammer—the drawn part is wavy, thereby causing a strain on the tin that is undrawn.

The effects of the wedge on the foundation are just the same as the hammering on the edge of the tin; and the tighter the wedge fits, and the hotter the foundation, the greater the damage.

Then if the spur-imbedder is run across this three or four times, and if the foundation is hot and soft, it is necessary to get the frames in a hive containing a good strong colony of bees immediately, or a slight change in the temperature will make the foundation look like the bent and twisted irons of a burned building.

We have taken particular notice of the effects of working hot or cool foundation, and we find that we get better results from the latter as to buckling and sagging in this climate. During the summer we have found that the foundation is generally just right the first thing in the morning.

We don't want our foundation cut when imbedding. We want the wire forced into the cell wall with as little damage to the cell base as possible, and with an even pressure. If the foundation is too warm and soft, and the pressure too great, the foundation is flattened, and the effects are the same as those from the wedge, but on both sides.

The frame which suits us best is one with a $\frac{1}{2}$ -inch top-bar, with or without a saw-kerf as a guide for the foundation in waxing. The frame is wired vertically with a splint of wood or a piece of wire or tin in the center, parallel with the wires, to support the top-bar. By using such a splint a much thinner top-bar can be used, like those in the old Simplicity frames, which are only $\frac{1}{8}$ inch thick. With this plan of wiring and fastening the foundation we think there will be scarcely any sagging or buckling.

We are indebted to the old Simplicity frames we have for some of these ideas, as we always noticed that these frames are invariably extra fine on account of the vertical wiring, tin splints in

the center, and the $\frac{5}{16}$ top-bar. This latter gives $\frac{1}{2}$ inch more comb per frame or 4 inches extra, amounting to half a frame in every eight frames.
Fort Collins, Col.

BEE-KEEPING IN CUBA.

Moving Three Apiaries 350 Miles on a Schooner; a Venture which Proved Disastrous.

BY FRANK REIMAN.

After keeping bees for several years in the southern part of the province of Havana, and being terribly annoyed by thieves, revolutions, and half-civilized people who hate the Americans, I decided to look for a more agreeable place. In the insurrection a year ago I suffered about \$1000 damages. The claims commission gave me \$500, and reminded me that this is what I could expect in a half-civilized country. Last May seven armed men entered the apiary and stole what they wanted; and after that set fire to the bee-yard and burned fifty hives of bees, honey-house, and all the contents. The loss was estimated by the judge at \$550. For this I tried to claim damages as an American citizen, and was told that I would not be troubled in this way if I lived in the United States, and he would not consider the claim. The average Cuban is far inferior to the North American Indian. They possess all the bad traits of the Indian, but after that they are the most cowardly race on the face of the earth. I would advise any American who desires to settle in Cuba to locate in the eastern provinces, where there are many Americans, and the people are very decent. I had been looking for two years for a place, and decided this part was best, so concluded in August to move every thing here as soon as possible.

How to move was the question. I could not sell at any price, and decided to move by schooner. I chartered a schooner for \$250 to take all the bees and fixtures for 600 hives. The schooner was represented as 40 tons, but proved to be only 30, and was too small to carry all, so I had to take apart over 100 hives.

I first had to cover 450 hives with wire cloth, which cost \$50. The carting cost \$80, and the moving by boats in a ditch two miles to the vessel cost \$35. After loading 300 hives a storm set in and upset many hives in the hold, so I had to move the mess back to the shore next day. The unloading and demurrage of the vessel cost \$120. After this I had the bees on shore for 30 days to get in condition, as the brood was nearly all lost, and the 450 hives came down to 225. These were loaded, then half packed in wire cloth, and the other half loose to do what they pleased in the bottom of the vessel—another cost of about \$27 for loading.

We started in a magnificent wind, and made many miles until 6 o'clock, when the captain anchored the vessel and said we would sleep there. For eleven nights we anchored in spite of protests I made to the captain; but he and the crew were a sleepy set, and refused to sail by night.

We arrived in 12 days—eight days overdue. I immediately filed a protest with the consul, who

had the cargo examined, and pronounced the bees a total loss. I succeeded in saving about 50 hives of those that were loose, but those in wire cloth all died. None of these had either eggs or brood except three of Italian, red-clover stock, which were of a lot of ten I received in July. These were ready for work at once, and laid in quite a lot of surplus while I still battled with many of the others to get new queens introduced to them.

The greatest mistake the Cuban bee-keepers make is to let the stock go too long before introducing new queens. Stock deteriorates very rapidly here, and some new queens should be bought every year. In Cuba it is impossible to raise good stock, so we must send to the United States. Red-clover long-tongued stock I find the best. Black bees we can not use, as the moth-worms often eat a super, honey and all, even when the hive below is in good condition. I think the great improvement in the honey queens has been the cause of overstocking the market more than any thing else. With the black bees the yield used to be from 5 to 10 lbs. a hive; but now it is 50 to 100. In Cuba a good hive of Italians can make a barrel of honey in a year when the natives make only from one to five gallons a year. I have since purchased and transferred 170 hives, and have now over 200 in working order, and am awaiting results in my new district.

Manzanillo, Cuba.

COMB-HONEY SUPERS.

When Shall They be Put on and Taken off? Shall Empty Supers be Put Above or Below the Full Ones? Some Excellent Advice for the Comb-honey Producer.

BY DR. C. C. MILLER.

What a changeable business bee-keeping is! No danger of a wide-awake bee-keeper stagnating from the monotony of his business. Always unsolved problems, always new problems arising. I still lie awake nights studying over them with just as keen interest as I did 47 years ago.

Take the matter of supers. When shall they be given? When taken off? Shall a fresh super be given above or below the one or ones already on? I confess I don't know—at least I haven't it down to any fixed rule, but must constantly be deciding each case afresh.

Almost, however, the question of putting on is settled; practically, it is. When I see the very first white-clover bloom I get supers on as fast as convenient—not that the bees will use them at once. I watched the thing very closely the past season, and it was just ten days from the time I saw the very first clover-bloom until I decided the bees were harvesting more than enough for their daily needs. So it might do to wait that ten days. But during that time the bees are getting acquainted with their new store-house; and when the rush of the harvest comes I *think* they commence storing above a little more promptly than if the super be not given until the very day they absolutely feel the need of it. Yes, I feel quite sure they do, and that little difference may make all the difference between their deciding to swarm and their not deciding. And that differ-



A CORNER OF DR. MILLER'S HOME APIARY, SHOWING THE STACKED-UP COMB-HONEY SUPERS.

I should have lost heavily if I had tried to limit each colony to two supers each; and there would have been loss—I think there was loss in some cases where there were only four supers, as shown by the honey and comb (especially comb) jammed in between supers. When bees are badly crowded, don't they hold the honey in their

ence in deciding may make a notable difference in the amount of surplus honey stored. So for years the appearance of the first white-clover bloom has been the signal for putting on supers.

"But don't the bees spoil empty sections when they are not storing?" Sure—plaster glue all over the wood, sometimes varnish the foundation with glue so that they refuse to accept it the following season, and sometimes gnaw the foundation badly. But that's just after the close of the harvest, not just before it begins. Bees use little or no propolis early in the season; they're not gluing up cracks, getting ready for winter; and for some reason they don't gnaw foundation as they do in the fall. (Don't they gnaw it in the fall to use as bee-glue?)

Just when to clean off all supers is a different thing. If the harvest would only shut off in an unmistakable manner all at once! but it has a trick of gradually tapering off, making it impossible to tell just when *surplus* gathering ceases—at least, that's the way often. One wants to leave supers on just as long as the bees continue storing in them. But how can one tell? This year, when I took all off, I found a few empty cells in some sections. The bees had already done a little carrying-down—not enough to make any important difference, but enough to show me that I didn't know enough to guess the right time to take off supers.

Shall additional super room be given above or below supers already on? and how many supers shall be on at once? That picture of a corner of the home apiary shows that I haven't settled down to the plan of allowing the bees to confine their attentions to only two supers at a time. July 18 here's the condition of affairs in the home apiary: 1 colony with 2 supers; 18 with 3 supers each; 27 with 4; 31 with 5; 8 with 6.

That makes the average a trifle more than $4\frac{1}{2}$ supers to each colony. If the inventory had been taken at some other time I think the figures would have been larger, for I know there were at one time a very few colonies with 7 supers each. As the years go by I think I incline to give more and more room when a big flow is on. I'm sure

sacs and turn a lot of it into wax?

Shall the empty super be given above or below? Sometimes one place, sometimes the other; and I don't always know enough to say which—often under; always under when there is a good flow on with every prospect of a continuance. Well, that hardly tells the truth either—at least the whole truth. In many cases this year I gave an empty super under, and at the same time an empty one on top of all. I wouldn't do that except in a good flow which promised to continue. But that empty on top—mind you, always in a good flow—can do no harm. The bees are too busy storing to do any mischief to the empty sections; the super-room is kept just a bit cooler in a hot time, and that upper super acts as a safety-valve in case the bees should happen to need the room.

I know there are good men who say, "Never give an empty super under." Of course, I know that hastens the finishing of the lower super or supers. But it hastens because it crowds the bees. It takes more crowding, too, to *start* storing in an upper than in an under super. And that crowding has such a great bearing on the swarming problem that I never want bees to feel they are crowded for surplus room. I want them to feel they have plenty of room—yes, abundance of room; in short, I want them to feel they have a surplus of surplus room.

A STRONG ARGUMENT FOR PUTTING THE EMPTY UNDER THE SUPER PARTLY FILLED.

There's one item in this matter of putting empty supers above or below that I don't remember ever to have seen mentioned in print; yet it has a very important bearing. You know you like to have the bees commence work in a super all over at once, the work just as well advanced in the four corners of the super as in the center. To me the prettiest sight in a super I ever saw is a set of sections exactly alike in advancement, every section nearly filled, but not a cell yet sealed. No, it isn't so pretty a sight to see the 24 sections all sealed with their snow-white cappings—not to me; for the sight I've described pictures a strong flow, a strong colony, and work of the

most uniform character. Well, I get that sort of work sometimes—not so often as I like—when I give a fresh super under to a strong colony in a strong flow. When I've given a super on top I never had such a state of affairs—never. The center sections were always well in advance of the outer ones, if, indeed, the outer ones were attacked by the bees at all. So, other things being equal, that matter of even starting all over the super is enough to settle me in favor of putting the empty super under, so long as I have any reasonable hope that the season will continue until the super is finished, or nearly finished.

When the season is well advanced, and it's a question whether an additional super is needed, that's another thing, and the super goes on top. Besides, crowding late in the season doesn't have the same effect as early.

But I hear some one say, "Your locality must be different from mine; for I've often given empty supers on top when the bees would commence just as promptly at the corners as at the center; in other words, I've had exactly the same kind of work with supers given above that you brag about getting with supers below." Well, I don't feel like disputing your word; and it isn't locality that makes the difference either. You don't give the room till the bees are so crowded that they're glad to occupy all the room at once. Let's not quarrel. If you like your plan it's all right. But I'd rather not crowd so much. I'd rather have less crowding, less secretion of extra wax, less inclination to swarm, and a little larger crop of honey.

Marengo, Ill.

[Like the doctor, we don't think that this idea of putting the empty under the partly filled super for the express purpose of securing more even filling of *all* the sections alike in the super has been mentioned before in print. Perhaps this has not been the experience of others. We should be pleased to hear from any one who has or has not observed the same thing.—ED.]

MAKING INCREASE.

The Alexander and Somerford Methods Compared.

BY CHAS. REYNOLDERS.

On the whole it seems to me there is scarcely an authority in bee culture superior to Mr. E. W. Alexander; at least, whatever conclusions emanated from him seemed eminently correct; yet in the A B C (1908 edition) there seems to me to be a contradiction which I ask you to explain. On pages 279, 280, you set forth the Alexander method of increase. On page 310 you deal again with the subject of increase together with that of nuclei. Considering the method of Mr. W. W. Somerford it would appear exactly applicable to colonies as well as nuclei; and if Somerford's method works (he says that *each colony should make four or five divisions*) what is the use of the Alexander method, pages 279, 280? Who would merely double his colonies when there is a possibility of increasing them four to five times? If both methods are equally reliable it would seem that the Alexander method could be dispensed with, however good it may be.

Then as to the Alexander method itself. The directions provide merely for doubling the number of colonies (every thing pertaining thereto "being equal"); but in the instance given, Mr. A.'s son is said to have made 20 colonies out of 9. Doubling 9 would make only 18, so some of the colonies must have been triplicated. How, then, was the triplicating done? Please explain exhaustively as to the relative peculiarities and reliability as between the Somerford and Alexander way, and then as to the Alexander triplication. I have only one flourishing colony of Italians, which I am trying to bring through the winter just as well as possible; and if I succeed I want to do with the same as nearly best as possible.

Finally, I should like to know how long queens can be kept before being introduced. I expect to see a predicament in the matter herein at first dealt with, in having new queens at hand at just the right time. How can one manage that? I have a neighbor living a mile west of the Susquehanna River, while I live ten minutes' walk east of the same. I may be able to get queens from him, but he may need a few dozen himself, and he has some fear that he and I together may overstock this country. The next apiarist of any account lives six miles further away. There are all sorts of territory here—cultivated land with clover and buckwheat; woods, pasture, waste land, etc. Ulster, Pa.

[Why, friend R., there is no conflict whatever. You did not read very carefully the first column on page 279. The Alexander increase is based on the idea of securing a *honey crop* as well as an additional number of colonies. Indeed, the very first sentence referring to this method reads:

INCREASE. Under the head of NUCLEUS several methods of forming nuclei are explained, but under this head we shall deal with the subject more from the standpoint of the honey-producer who actually desires increase and at the same time produce a crop of honey.

The Somerford plan involves only the largest number of colonies possible from one without reference to honey. You see there are two separate ideas—one aiming at a honey crop and increase; the other, maximum increase only.

Regarding the 20 colonies and the 9, it is probable that two of that 9 were strong enough to make two other colonies each. In following an author one will, of course, be governed by conditions and not by absolute rule, the rule being only a guide.

Queens can ordinarily be kept a week after they are received from the mails; but the sooner they are put in the hives the better. It is not necessary to prepare hives for the reception of queens. As soon as queens arrive, go to the colonies to which you propose to introduce them; remove or kill their queens, and cage the new ones at the same operation. Indeed, one may cage a queen in a colony, fixing her cage so that she can not be released for from 24 to 48 hours. During this time the old queen can be allowed the range of the hive. At the end of the time stated, the old queen should be removed, and the cage with the new queen should be so fixed that the bees can automatically release her by eating away the candy.

We wish we could do something to get rid of the notion that a colony must be queenless three

or four days before the introduction of another queen. We presume half of those who receive queens will actually keep them in the house for two days after the old queen has been removed, and then proceed to cage her. This is a great mistake. She should be put in the colony at once.—Ed.]

HEADS OF GRAIN FROM DIFFERENT FIELDS

HONEY THAT CANDIED AS SOON AS CAPPED.

My bees made nice honey last spring, but we had a drouth, which, excepting a few slight showers, lasted all summer and cut the honey-flow accordingly. About September the bees began working again, and in a short time had accumulated a surplus of honey. This had a good flavor, and was white in color; but all of it had granulated in the comb before being taken from the hive. The degree of granulation varied, even in one section, for part of a section would be very granular while the rest of it was only slightly so. "Mushy" would best describe the condition. The wax in the comb was noticeably thin, being hardly thick enough to be objectionable when eaten. There was a little very dark-amber honey which was not at all sugary.

The honey was taken from the hive as soon as capped over; and some kept in an unheated store-room and some in a room always kept warm; but I noticed no difference in the keeping.

So far as I know, most of the honey was made from sumac and a tall white weed which some call boneset; but I doubt if this is the true name. The bees were also busy around sheep-burrs, Spanish needle, smartweed, wild sage, rosemary, and a tall yellow flowering weed that grows along roads and in swamps, and a number of such growths.

We have fields of broom sedge all around us, but I did not notice bees around that; and any way, this broom sedge we have with us always, and the sugary honey is something new.

I do not understand the care of honey, as I have just begun to try to handle bees, and so would have thought the condition of honey due to my ignorance if it were not general throughout the county. Some of the honey sold is in a very much worse condition than mine, being quite dry, and can be eaten like candy.

I have lived in this vicinity a number of years, and never heard the complaint before; but older residents say that it is owing to the dry weather, and that it often occurs in dry seasons.

Port Tobacco, Md.

MARGARET GRAY.

[It seems to me you waited too long before you removed the honey from the supers. When half of the sections in a super are finished, take them out and put the others in the center to be finished. This applies to fall honey particularly. The colonies dwindle down until there is not a sufficiency of bees to keep the honey warm. Dry weather does accelerate granulation. The honey from some of the plants you mention is much inclined to granulate, and the dry weather made matters worse. Further experience will enable you

to prevent largely this trouble in future. The flowers sent are asters.—W. K. M.]

KEEPING ANTS OUT OF HONEY-HOUSES IN WARM LOCALITIES.

I have a very simple yet effective method of keeping ants out of buildings, that I have used for twelve months or more. It is nothing more than having the house stand on posts (mine is on posts made of mulberry wood). A box surrounds the bottom of the post, which is filled with cement, and a trench 3 inches deep and about 3 inches wide is made in the cement. This will hold water three or four days or longer, even in hot dry weather; and when it rains the trenches are filled up without any help. When it does not rain, of course one has to fill them. The plan is far ahead of any thing else I have ever seen.

Macon, Ga.

HARRY GRIFFIN.

[In the northern States ants do not prove to be a serious enemy to the bees or bee-keeper, and, consequently, no special provision needs to be made other than to find the nests and destroy them.—Ed.]

MOVING COMB HONEY SUCCESSFULLY ON A WAGON; UNITING COLONIES.

You wished to hear from those who have had good success in carrying section honey to market. I take the sections out, clean the super and sections of propolis, return them to the super, thoroughly wedge them in, put them in a box, tying them up. I put hay in my lumber wagon, set my box in, and it arrives in town in perfect condition; and when I tell you it goes over the roughest roads you will see this is remarkable.

I started in the spring with 11 colonies and now have 31. I might have had 50, but I united them by putting paper jabbed full of holes on top of the hive I wished to unite, and set the other hive on top of it, and always had good success except once, when the upper bees got into the lower hive too quickly. They fought and killed each other; but two good smokes in the entrance made them think of something besides war.

Brainerd, Minn.

J. F. WATSON.

IS IT ADVISABLE TO WINTER BEES IN BUILDINGS ABOVE THE GROUND?

I am often asked if it would be a good way to winter bees by putting them in a barn or out-house. For instance, could they be put in a honey-house and the entrance closed up with wire so they could not come out? Would you advise me to winter them that way? I have not a good cellar to winter them in.

Schenectady, N. Y.

H. GREULICH.

[It is not generally advisable to try to winter bees in a room above ground, and still more inadvisable to shut them in the hive with wire cloth. While some make it a success, the beginner, we feel sure, would make a failure of it. A repository under ground will maintain a more uniform temperature; while one above ground will often become so warm that the bees will become uneasy—particularly so in mild weather. In very cold spells also the temperature may go down to freezing and below, and this is quite as bad as letting it go too high. In indoor wintering it is very important to maintain a uniform

temperature. If this can not be secured, a large amount of ventilation must be provided in such a way as not to let in light.—Ed.]

WHY HONEY SOMETIMES FERMENTS IN THE HIVES.

I have noticed the different articles in GLEANINGS on fermentation of honey in the hives, and have just read the one on page 1254, Oct. 15th. I have had considerable experience along this line, and I find that the main cause of fermentation in our locality is too much rain when the alfalfa is in bloom, or the giving of too many extracting-cases of fully drawn combs at a time, inducing the bees to bring in more of the thin nectar than they can take care of, resulting in the fermentation. I have seen it so bad that some of the cells would burst open after being capped over; and my remedy has been to extract the honey and throw it into the vinegar-barrel or use it for spring feeding. In hives run for comb honey I seldom have such trouble.

Fermentation often takes place in hives with the strongest colonies. I have never noticed the bees dying in such hives, but they get very uneasy, and cover the front end of the hives for days, and show other signs of uneasiness. The honey sours, and the caps burst open, thus keeping the bees busy cleaning up over and over. To prevent this, run for comb honey or don't give too many extracting-cases of drawn combs at one time.

After the honey has begun to ferment in the hive the combs may have to be extracted two or three times to stop it.

Augusta, Kas.

R. L. SNODGRASS.

A BEE-VEIL IN WHICH THE WIRE CLOTH IS SHADED.

Wire-cloth veils are the most satisfactory of all. I have worn them for years, and would not tolerate a soft veil. I have found them much more satisfactory when sewed to the brim of a stiff straw hat. I sew the wire cloth to the hat-brim so that more than half of the brim will project over the wire cloth which shades it. Then I can see through it better.

Fillmore, Cal.

W. C. GATHRIGHT.

MOVING COLONIES FROM OUTYARDS.

What is the best way to move bees from out-yards after Nov. 15, to home yards, a distance of four miles? Would it be best to move in the fall or spring? Why?

A READER OF GLEANINGS.

[Use a spring-wagon, or else plenty of straw under the hives. Any time may be selected after the bees have ceased to fly every day. Cover the entrances with wire cloth.—Ed.]

HOW SKUNKS SOMETIMES DO SERIOUS DAMAGE IN A BEE-YARD.

While looking through my apiary to-day I saw signs of skunks that indicated they were destroying many of my bees. These signs might not be noticed by one not having had experience. I think many cases of bees not wintering well on their summer stands might be traced to the depredations of these animals. My apiary is located in a village lot, and very near the house, or I might not have discovered the midnight thieves.

Several times last fall we heard a faint scratching on some of our hives in the evening; and as some of our bees were very cross I took a lantern and went to discover what was disturbing them. I found two or three skunks at different hives eating more bees than most of us can afford to lose at this time of the year. I killed five, but still they came. I finally stopped them by placing poultry netting around the entire yard, but they had so weakened several colonies that they did not winter, and many more came through very weak.

I told my story of my night visitors to several of my friends who keep bees, and in every case they trapped and killed several of the "varmints."

Bees visited by skunks will be very cross, and will come boiling out of the hive on the least provocation. The alighting-board will show claw-marks, and look dirty; and you will sometimes see many bees killed but not eaten.

East Trumbull, O.

W. C. EASTMAN.

[We have had reports before, showing that skunks in some localities do serious damage to a bee-yard.—Ed.]

WHY DID THE BEES TEAR DOWN THE QUEEN-CELLS?

What causes the bees to tear down the queen-cells at about the time they are ready to cap over? I have been troubled more or less all summer by having them removed at about the time they are capped. I have tried queenless bees, caging the queen, fastening her up at one side of the hive with a queen-excluder, and placing them over a queen-excluder on a strong extracting colony, but they removed them all in about the same proportion; that is, they tore them down one way as much as another. It does not make any difference if honey is coming in or if I feed them. I have used black, Italian, Carniolan, and Caucasian bees for building queen-cells. Caucasians and Carniolans are the best cell-builders with me. They remove the finest cells of any. Now, I should like it if you can tell what causes the trouble. I have tried about all the plans of raising queens I have ever heard of or can think of that should cause them to tear the cells out; but I can't tell why they keep on doing it.

Baldwinsville, N. Y.

EDW. REDDOUT.

[The tearing-down of the queen-cells as here described, we should say, was due to the fact that a virgin hatching much ahead of the rest was responsible for the mischief. As she was looking very much like a worker after the first 24 hours, you might have failed to note her presence. There is no reason why uncapped cells in a queenless colony should be torn down unless there is a queen loose. In rare cases the inmates of the cells might be affected with foul brood, and die from disease before maturity.—Ed.]

BEE-PARALYSIS.

A conference was held last week in West Maitland, on the above subject, by three of our leading bee experts, viz., Mr. W. S. Pender (N. S. W.); Mr. Beuhne (Victoria), and the writer of this article. Mr. Pender kindly provided microscopes for the occasion. Mr. Hutchison, in supplying the subjects for investigation, said he

had considerable difficulty in being able to procure them. They consisted of a dozen bees in the last stage of that dread disease paralysis. Two years ago in this district and in many other districts it was almost impossible to find an apiary which had no signs of it. To-day it was just as impossible to find an apiary which has any affected bees, which, in his opinion, proved that severe winters have a deal to do with causing the disease, and the only cure he knew of was a good honey-flow and a little patience. Mr. Beuhne said that what was classed by apiarists as paralysis was, in his opinion, three distinct diseases, and until they can be identified separately they can not expect to effect a cure. He believed in purchasing his breeders from an apiary in which the disease had visited previously to his purchase, as reliable queen-breeders would be certain to breed their stock from such colonies as were proof against it. Mr. Pender said he discovered the presence of bacilli in the intestinal tubes of the bee by aid of the glass, but was not sure whether they were propagated by the disease or whether they were directly or indirectly the cause. No definite results were obtained, and they adjourned till some future occasion.

J. A. HUTCHISON.

West Maitland, Australia, Sept. 14.

VERTICAL WIRING.

Some of your readers may be interested in a plan of upright wiring of frames, which I am now practicing, and which seems to me not only simple but effective, in supplying much more resistance to the sagging of foundation.

Where there is no groove in the top-bar the plan is both easy and inexpensive. Simply bore four small brad holes in the center of the bottom-bar at suitable distances; run a gauge along the under side of the top. Mark this to correspond with the bottom holes, and hammer home as many small blind-staples. Thread the wire from right to left, which first fasten with the usual tack on the edge of the bar; provide a small strip of wood to place temporarily in the center of the frame while tightening to stop the bottom-bar from being pulled up unduly. Even where combs have to be cut out occasionally, the staples, being almost out of sight, need never be disturbed.

New Zealand. THOMAS SUTHERLAND.

[The plan here spoken of is feasible, but it involves a great amount of work; but the result in the end might be more satisfactory than the present horizontal plan.—ED.]

HOW TO TEACH CHICKENS TO CATCH DRONES.

I wish to tell you how I teach my chickens to catch drones. First I shave cappings of sealed drone brood (if they are just hatching, so much the better), and I throw a few of them on the ground, then I hold the frame and let the hens take the larvæ out. The chickens can beat me for getting them out fast. Repeat this a few times. They learn quick. I went out this summer at 2 o'clock one day, and saw not less than six broilers stationed at as many hives. I watched one in particular. He caught 16 drones in a few minutes, always dodging behind some foliage to eat them; but after he caught the sixteenth

one a bee took him under the beak. Then he jumped up and down. I saw them day after day station themselves at the hives as soon as they heard drones flying. They beat all other means I have tried, for it is only a short time before drones are scarce where the hens tend a hive. I then sold my broilers. It is very amusing to watch them.

Fremont, Mo.

MRS. ALMEDA ELLIS.

[Many thanks, my good friend, for the facts you have given us. I presume drone brood or live drones would be excellent food for growing chickens; but we can hardly as yet afford to advertise them at "ten cents a bushel." As I have remarked before, it is a rather expensive kind of chicken food—that is, if we should undertake to rear drones on purpose for chickens; but after they are started, the sooner they are given to the chickens the better for the bee-keeper. Every effort possible should be made to stop the production of useless drones; but after they are once hatched out in the hive, by all means teach the chickens to catch them.—A. I. R.]

HONEY SPOILED FOR TABLE USE BY BOILING.

I bought some honey (?) from a dealer, represented as "very nice-flavored honey, dark-colored," etc. I put some on to boil; and as soon as it was hot a very thick brown scum formed on top. The scum was removed, but it kept forming. After boiling 30 minutes there was a thick dark substance, about like jelly, commenced to form in the liquid. What substance could the bees gather that would do this? Should I ask the dealer to exchange this, or will it be all right to put this out under a "pure honey" label? I can not help doubting its purity.

Randolph, Nebraska. B. F. SMITH, JR.

[There is no evidence to show that the honey was not pure. No honey should be boiled in the manner that you have explained; in fact, almost any pure honey, after that kind of treatment, will have a scum form upon it; and if the honey be dark, such scum will be brown in color. The only time bee-keepers ever boil their honey is when it is suspected that it may contain the germs of disease. Such boiling, however, always spoils it for table use; and, really, it is fit only for manufacturers' use or to feed back to the bees.—ED.]

SOME OBSERVATIONS AFTER 20 YEARS OF EXPERIENCE.

I have run my apiary for extracted honey some years, and for comb honey in others. Some seasons I have produced both. To produce comb honey the bees work in an abnormal condition. With large hives, and plenty of room, little or no swarming results. This is a natural result—a normal condition. Bee-keepers are up against the side of a mountain in trying to combine comb-honey production and no increase. Comb honey and extracted in the same super is a failure as regards comb-honey *quality*, in my experience.

I find $\frac{3}{4}$ hive-bottoms a nuisance. They soon get as shaky as an old politician. Mice *will* gnaw through them.

Every colony I lost this winter was caused by a warped or cracked cover. A first-class cover means, nine times out of ten, a first-class colony. Water always freezes at the top. Look at a tub

on a cold morning. Where do you find the ice? Cover over your tub and see the difference. Nothing is better than a warm tight top to a hive. I shall not remove a cover or loosen one before May 1.

I can tell from the entrance whether a colony is queenless. The loads of pollen indicate prosperity, and the exact condition can be read at a glance.

The only way to keep bees is to keep them at the front. Let other matters take the side track.
Bellevue, Neb. A. H. HOOD.

SOME EXPERIMENTS TO SHOW THAT BEES ARE ATTRACTED BY THE NECTAR RATHER THAN BY THE COLOR OF FLOWERS.

On p. 1189, under head of "Are Bees Attracted by the Color of Flowers or by the Nectar?" the idea is expressed by Mr. Buttell-Reepen that bees are attracted by the color. I made observations and found that bees went to cosmos from white to red, to African marigold, to the different colors, from light yellow to dark brownish red; to cannas, all colors; to dahlias, also to all colors ranging from white to dark red. At dahlias, however, bees often hesitated, coming from the simpler kinds to those filled up more like cactus dahlias. I have also seen bees going from yellow flowers of one kind to yellow flowers of another kind, but did not touch; for instance, from yellow dahlia they flew to the fall sunflower, and flanked off when about one to two inches near the flower.

Bees have not hesitated at all or very little when going from one flower of a certain color to the flower of another color of the same kind of flower.

Brooklyn, N. Y. OTTO REINER.

PROPOLIS MIXED WITH WAX.

I have to contend with a great deal of propolis here when extracting. I scrape it off the frame before uncapping, and it goes right in with the cappings and through the solar extractor. I wish to know if it mixes with the wax and thus renders one liable to the penalty of adulteration under the new law; and if so, how can it possibly be avoided where there is much propolis?

ARIZONA.

[If the wax from the solar ran out in a very small stream, or in drops, it would chill before any propolis could have a chance to settle. Under such conditions, therefore, or when, for any reason, the propolis is mixed with the wax, the whole mass should be heated just above the melting-point of the wax, and cooled slowly, so that the propolis may settle.—ED.]

LIGHT ITALIANS GENTLE.

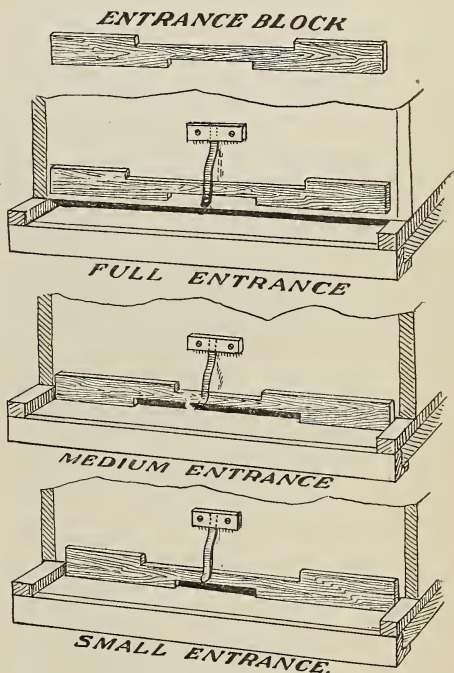
Every now and then I see you are not in favor of the light-colored bees. People that see my bees and what I am doing with them are surprised. A good many say they can't do what I do. I have bees that I handle with my sleeves rolled up, and bareheaded.
Best, Pa. D. E. BEST.

[Not all strains of yellow Italians are cross by any means; but it has been our experience and

observation that most of them are. Not only that, but some of them are short-lived, and poor honey-gatherers. The trouble is, the rage for color is apt to overlook some other desirable qualities.—ED.]

AN ENTRANCE-CONTRACTOR THAT CAN NOT BLOW AWAY.

I use a bottom-board with $\frac{3}{4}$ -inch cleats on the front, tapering down to $\frac{3}{8}$ at the back of the board, making an entrance $\frac{3}{4}$ by the width of the hive. This size is used on good colonies for June, July, and August, and also for the winter months while in cellar. When I wish to contract the entrance I use a notched stick held in position in front of the hive by a super spring. This is fitted between two small blocks $\frac{5}{8} \times \frac{3}{4} \times 2\frac{1}{2}$, fastened to the hive with two screws which hold the spring firmly. This entrance-block is cut out on one edge $\frac{3}{8} \times 4\frac{1}{2}$, on the other edge $\frac{3}{8} \times 8$. This is similar to the plan of E. H.



Clare, p. 235, although I use one spring and one block which will stay in position. Neither wind nor chickens can remove it.

A $\frac{3}{4}$ entrance suits me well in summer, and for cellar wintering; and in fall or spring it can be changed in an instant without hunting for entrance-blocks.

A. TIEN.

Falmouth, Mich.

[The contractor here shown is simple and good. The ordinary hive super-springs would answer very well to hold the contractor in place. But such things would interfere with putting on Alley traps should their use be deemed necessary at any time.—ED.]

OUR HOMES

By A. I. Root

If the Lord delight in us, then he will bring us into this land, and give it us; a land which floweth with milk and honey.—NUM. 14:8.

Dear friends, I want to tell you a story that I have told once before. I want to tell it again because it has a new significance just now; and I am also reminded of some things that I omitted in my first narrative.

About the year 1874 (over thirty years ago, you will see), when I was very busy one morning planning my article for the A B C book in regard to bee-hunting, a good-looking well-dressed stranger came down to my home. I looked him over and concluded he was a traveling man who had something to sell—probably something for jewelers. My store had just been burned out, so I was for the time rather out of the jewelry business, and my mind was all taken up with bee culture. These runners are very bright fellows, as some of you may happen to know, and sometimes it is not very easy to put them off. This fellow was much interested in bees or (at least so I thought) he pretended to be. He asked a great lot of questions, but just then I had not time to answer them. He did not seem at all hurt, even if I was somewhat rude to a stranger; and when I tried to excuse myself by saying I had employed a man, a veteran "bee-hunter," to go out in the woods hunting bees, he with great readiness proposed to go also. I hope he will forgive me when I say that on that particular morning I did not really want him along. If he kept asking questions as he had been doing I could not well give my whole attention to the bee-hunting and write it up in good shape for the A B C book that was just then in embryo. By the way, let me digress a little.

At that early date I had learned that a teacher must *know* what he is talking about. We had agricultural papers published then (may be some of them now) by city editors who thought they could instruct the farmer by just sitting in their nice offices and not going out over the farm and through the woods at all. No wonder farmers were disgusted with book farming and farm papers. Well, I had decided that I would not write a thing for that A B C book until I had been right on the spot and been through it, and had seen the things I wrote about, with my own eyes; and that is exactly why my A B C book and GLEANINGS IN BEE CULTURE took hold of the people, and took such "root" and *grew*.

Well, this city chap with his nice clothing went along. I think he was rather fleshy at that time, even if it was over thirty years ago, and I concluded he would soon tire out and go back to town. But he did not, even if it did make him puff and sweat somewhat to climb over logs and follow the line of the bees. I do not now remember very much about what happened that day, as it was so long ago. But two little incidents impressed themselves on my mind while we were out there in the woods. I was interested in music at that early day, and I had been taking lessons on an instrument. While out in the woods I began whistling one of the exercises I

had been going over on the keys during the morning. As this simple little exercise was running through my head I kept whistling it over and over. Finally this city chap remarked that the little melody I was whistling *was* rather pretty; and when he finally added, "I am glad you like it, for it is one I composed," I stopped abruptly and turned around and looked at him. He looked remarkably innocent; but I made up my mind that he was only a "runner" and said this in order to get into my good graces and sell me something or other. I think I was too polite to tell him frankly what I thought of his statement. He was very much interested in bee-hunting. When we got home, although I had enjoyed my visit with him, I rather hoped he would stop at the hotel. But he did not. He came on down to our house. Then he wanted to see my music-book, "Root's Curriculum." I brought it outdoors and let him see it. Near the title he pointed to a star. At the bottom of the page he called my attention to a line of fine print. This fine print read, "Composed and arranged by Dr. C. C. Miller." I did not catch on, even then. Finally he pointed his thumb toward himself and said, "That's me. I am Dr. C. C. Miller." When I told you out in the woods that I composed that little refrain you did not believe me, and thought I was just bragging."

About that time I think I put out my hand and said, "Dr. Miller, I humbly beg your pardon. I meet so many men who take up a lot of my time before I find out they have got something to sell or some investment they want me to go into, that perhaps I am a little suspicious. I hope you will forgive me."

Then I invited our old friend into the house, and introduced him to Mrs. Root and the Root-lets. I think, however, I could not quite get it out of my head that he had some purpose that had not yet come to light. During the evening (for he stayed that night with us) he sang quite a few beautiful hymns; and one especially among them that I shall remember as long as I live; in fact, I believe I shall be glad to hear it sung when I come to die. It was the hymn called "The Rock that is Higher than I." By the way, if it should ever be your good fortune to meet Dr. Miller, by all means have him sing that old hymn for you. Well, before Dr. Miller left us (I think it was at family worship next morning, for about that time we had become well enough acquainted with him to invite him to ask a blessing at the table, if nothing more), I began to urge him to stay longer, instead of hoping he would go away, as I did 24 hours before. Then he said something like this:

"Mr. Root, I *have* been deceiving you somewhat. It *is* true, however, that I am greatly interested in bee culture, and I have been longing for the time when I could have a little home of my own, and do nothing but stay at home and keep bees. I have questioned you a great deal as to the possibility of a man's making a living by bee culture alone. You think it somewhat doubtful—at least until the man has had years of experience. Now, nothing would make me happier in the way of obtaining a livelihood than to be able to secure even moderate means, and be with my wife and family and my bees. I am hoping and praying that this may be brought

about. And now I will tell you frankly that there is one other thing that is even dearer to me than bees and bee culture—yes, of even more account, in my estimation, than a land flowing with milk and honey. I have been reading your writings in the *American Bee Journal*, and later in the *GLEANINGS*, that has been so well started. I see that you have the rare gift of interesting humanity. You love rural occupations, and God has given you the faculty of making others love the open air and the great broad fields as you do. Now, I want to see your influence, your zeal, and your peculiar gifts employed in winning souls to the Lord Jesus Christ as well as leading mankind to love outdoor work and rural employments, and that is mainly why I came here. I have hoped and prayed that something might happen to give me a glimpse of your home life. I knew you felt somewhat annoyed, but I felt there was something at stake, and I (for once in the world at least) crowded myself into a home where perhaps I was not wanted—that is, until you people knew me better. God has answered my prayer. I have had here one of the pleasantest visits of my life. You can not know or tell how I have appreciated this. And now I am going to arrange my business and my plans so as to be a bee-keeper and stay at home instead of being a traveling man for a great music house, and I want to keep in touch with you if you will not think I am asking too much."

There was some more conversation, that I can not recall, about making the Lord Jesus Christ my confidant and my friend. I tried to excuse myself by saying that I was not hostile toward Christianity; but my new friend said, very emphatically and solemnly, "He that is not for me is against me." Then he reminded me that not once in my writings in the *American Bee Journal* or *GLEANINGS* had I intimated or recognized the fact that the Savior of the world has claims on each and all of us. I accepted his friendship just then, but I did not accept Jesus Christ as the son of the living God until some months afterward. Since then I have thought of the way in which Moody and Sankey were received when they went over into England about that time. Our friends across the water were suspicious of the Yankees, and God knows they had reason to be; and when the story was started that Sankey was the agent for the little organ he used to accompany his singing, he was obliged to reply publicly, and assure the people that he had nothing to sell—that his sole business in going from America to England was to offer salvation as a free gift. "Ho, every one that thirsteth! Come ye to the waters; and he that hath no money, come." When the people were really satisfied that there was no appeal coming in for their money, they accepted him, and a great work followed, and Moody startled the world by showing that at least *one man* actually refused the money the people wanted him to take. Both he and Sankey might have become millionaires, but they did not want it and did not take it. Dr. Miller was getting what we considered at that time a large salary. I told him he could expect nothing like it in the way of bee culture. He said he did not care for a big salary, and did not want it. When I read that little Straw on page 1303 about living for a whole week on 35 cents' worth of boiled wheat, I thought

of what he said about living a humble life with his bees. And now after all this preamble I want to have a little talk directly with our veteran friend. I think I shall have to call it an open letter to Dr. Miller.

Dear old friend, when I first saw that Straw on page 1303, about your wonderful yield of almost 20,000 sections from 129 colonies, I wondered if you remembered a conversation that you and I had on that morning when you went back to your work as a traveling man. We both had high aspirations for the outcome of bee culture; but I for one never expected you would ever make any thing like that which you have already reported. Of course, you have said repeatedly, while God has been blessing your labors, "Praise God, from whom all blessings flow;" and verily he has fulfilled the promise found in our opening text in helping you and me both to make this "a land flowing with milk and honey." I can hardly understand it now. When I made you a visit some years ago you were getting a great yield of beautiful white honey, and you said you actually could not tell or suggest where the bees got it. God sent it; and in this journal for Nov. 1, when I saw your statement of from 200 to 276 sections to a colony, I wondered again many times if you said, "Praise God, from whom all blessings flow." Then the figures you give there contain some lessons. If a queen, at least sometimes, is so valuable at two years of age, is it not true that a Leghorn hen (begging your pardon) may be valuable at two and three years of age? One moral is, that we must not go to killing off our queens or biddies just because they are *two years old*. But we should try to adopt some means to let the actual record (trap nesting), and not the age, decide how long to keep them; and the same with humanity. Let the record, not the age alone, decide in regard to a man's fitness for an important office.

I was wondering if you could not be induced to start in with Terry and me for not only a long life but a useful one. You have already, dear old friend, by your long years of experience, saved many a youngster from useless blundering. Of course, we old fellows have a good opinion of the value of our past experience; but there are plenty of younger ones all around us now who can with loving hearts guide and direct *our* footsteps while we are getting feeble from old age. God bless the younger ones; and may he help us to be ready, when it shall seem best for us, to stand out of the way and give place to the younger ones. I am sure they will always be ready, at least to stop and consider what we say, when we assure them they are going wrong. I for one rather *enjoy* growing old, especially when such friendly greetings cheer me, not only in my home, but in my writings. You say on page 1303 there are three reasons for your great success—"forage better; bees better; better bee-keeper." I wish these younger ones and everybody else would remember that your success stands back of you to *emphasize* the value of your opinion on almost all points in bee culture. I think I said recently, "May God be praised that he has permitted me to live and be in touch with such men as Edison, the Wright Brothers, Moody and Sankey," and last, but not least, with such a man and such a teacher as my dear old friend *Dr. C. C. Miller*.

TEMPERANCE.

"JOHN ALWAYS WAS A GENEROUS FELLOW."

BY EDWARD F. BIGELOW.

Evidence 1.—I sat by John at school on the old slab bench. The teacher's eye was sharp and voice was stern. We watched him furtively till, selecting the time when his face was turned toward "the board" to explain some difficult problem, we cut a sly caper. Now we "fired" a paper wad, raising a quickly smothered laugh from the opposite corner; then we held up briefly a jumping jack, and, later, John (with truly artistic spirit) drew a cartoon of Sam and the teacher at the board. Then John and I would dive beneath the desk, and he would share with me his luncheon apple. Thus did John and I while away the winter's day at school to the delight of our companions. John always was a roguish, chummy, generous fellow, but he set a pace in merry play that I could not follow.

TWENTY YEARS LATER.

Evidence 2.—For a score of years I wandered far away from the old farm, but John moved nearer to the village, and there lived on. In a mood that longed for boyhood days again, I visited the old schoolhouse. The walls were neglected; strange trees were growing where bushes had been; but the trees that I had known had become smaller. There was not a child that I recognized; but Alice, the teacher, greeted me as cordially as when she spelled the words I missed, twenty years before.

"And how are your father and Aunt Sue? I remember the walnuts she gave me."

Alice sighed and shook her head sadly. "Father isn't very well; Aunt Sue (didn't you know that?) died two years ago."

"But where is John, my chum?" I inquired. "He used to write to me occasionally, but for a dozen years I have lost track of him."

"John," said Alice, "is his own worst enemy. He can't keep what he earns, but spends it all with boon companions in the barroom. He has too large a heart. John always was a generous fellow."

TWENTY YEARS LATER STILL.

Evidence 3.—Again I wandered into scenes afar, till at the end of another score of years a similar longing led me back to the little village. Only Uncle Eben knew me. He still keeps the corner store, where I had tugged out supplies to the farm wagon forty years before. How short a time! how long a time it seemed! Uncle Eben laughed heartily, and his grey beard bobbed up and down as did a brown one forty years ago. "Goin on eighty," said he; "pretty near time ter call the job done. But you," he said, "how fast you have grown taller!" But this seemed not to me surprising. If one is ever to grow tall, it should be within forty years I think.

"But what are those boys doing out there?" I inquired.

"They're plaguing John—get him so mad—pull his coat and punch him; but, say; you know John—why, John went to school with you out on the hill—poor John! He gets so 'full' it is a pity."

"John!" I exclaimed, and up the walk I hurried. And this old drunkard! I'll ask him where is "John," Jumping Jack John, among those plaguing boys. But this was my first thought—forty years—can it be that the drunkard is John? I'll try to see, so I took up the shout of the boys, but with a far different accent, "John! hey, John! they say you are John—don't you know me?"

But, no; it can't be my John, for he reeled backward on the walk and against the tree, bracing himself there, muttering in maudling, drooling, leering tones, "Well, what do you want, with all the others? I—I—s-a-y, you go to hell, will you?"

"John always was a generous fellow."

Stamford, Conn.

[Let me say to our readers that it made my heart throb when I saw something from Prof. Bigelow, written for my temperance column, and I want to call attention to the fact that the above is not only a grand temperance talk, but it is a *boiled-down story*. I am beginning in my old age to recognize that one of the indications of a great mind is the ability to tell much in few words, and Prof. Bigelow has done it. Most of us who have lived to be toward threescore and ten have had the same experience in meeting some old friends of our boyhood. May God grant that the record of the next generation shall tell a *different story*.—A. I. R.]

OHIO SHALL BE FREE.

At the present writing, the counties in Ohio are going dry at such a rate that one can hardly keep track of them. Big cities that have been literally entrenched in the saloon business have been made dry by the rural residents, even though the brewers put in their money and left no stone unturned to hold their trade. On page 1332 I gave a little clipping of the way in which one of our bee-keepers and honey-men heads his advertisement. Here is something more from our enterprising young friend:

Mr. Root:—Confirming my telegram of last night, it is my very great pleasure to inform you that Muskingum Co. voted "dry" yesterday by a majority of 1116. While the city went wet by a little over 1400, this was overcome by the vote of the rural districts. The wet majority in Zanesville was less than that conservatively estimated by the drys, while the dry majorities in the country exceeded expectations. Our temperance organization was well nigh perfect; and, in spite of thorough organization, stubborn resistance, and an immense corruption fund freely expended, we have, with God's help, won a glorious victory. One of the most gratifying results of this election is the breaking of the backbone of the Republican-Liquor organization—one of the most corrupt aggregations that ever dominated county politics.

EDMUND W. PEIRCE,

Zanesville, O., Nov. 17. Dealer in bee-keepers' supplies.

THE SALOONS AND TAXES.

Just now not only in Ohio, but more or less in the whole United States, there is war between the brewers and the Anti-saloon League workers. The strongest argument that has been brought forward by the saloon is that they *help pay our taxes*. The following, from the *Ohio Farmer*, is one of the best answers I have ever seen to those who really think that the open saloon is of some benefit in this way.

SALOONS INCREASE THE TAXES.

Because the liquor forces are flooding Ohio counties in which local-option elections are pending with warnings to voters that their taxes will be increased if they vote out the saloons, and

with arguments that the saloon taxes pay the poorhouse bills, etc., we wish to present the following facts for the especial consideration of any who may be likely to be misled by the fallacy of their arguments. There are not many public-spirited farmers who would not far rather pay more taxes to get rid of saloons if that were necessary. But it is not necessary. Instead, the absence of saloons and of the necessary means of controlling them and the disorder that they create, and of relieving the distress that they cause, has cut down the expense of every community that has voted them out. Read this testimony: Newcomerstown, O., reduced its tax rate 4.5 mills within three years after going dry. Athens, O., reduced its rate 8 mills in one no-saloon year. East Liverpool, O., 1.2 mills in one year. The mayor of Brunswick, Ga., says: "The decrease in crime since the passage of our prohibition act has been at least 80 per cent in this city." The sheriff of Oklahoma Co., Okla., in which the capital city, Guthrie, is located, says: "Since the anti-saloon act took effect, 60 per cent of the crime has ceased." In Knoxville, Tenn., as the result of no saloons, the salaries of the public-school teachers have been materially increased, and the school fund increased from \$63,000 to \$106,000. Comparison of arrests for drunkenness under "wet" and "dry" regimes are convincing. In Galesburg, Ill., during June, 1907, with saloons, the arrests were 113; in June, this year, no saloons, there were only 15. In Haverhill, Mass., during "wet" May, 1907, there were 91 arrests; this year, "dry," only 15. In Atlanta, Ga., during "wet" January last year there were 341 arrests; this year, only 64. An East Liverpool, O., business man wrote recently: "With 53 saloons we had not enough money to feed prisoners or purchase new collars for the east-end fire-station horses. With no saloons we have equipped a new fire-station at the west end, furnished free text-books in all our schools, and made provision for a purer water supply, yet our tax rate for the ensuing year is lower." Remember that the court and police and poverty-relief costs of saloons always exceed the taxes brought in by them, to say nothing of the greater cost caused by the destruction of manhood, morals, thrift, and industry.

PERSONAL LIBERTY; THE AMERICAN FLAG, ETC.

Dear Sirs:—Being a regular subscriber to GLEANINGS, I should like to make some suggestions in my way of thinking on some of the topics in your temperance columns. As for myself, I do not like them at all, and can't see any thing in them but a lot of trash, and think that, when you issue a bee-journal, you should stick to the bee industry alone, and give your readers what they are paying for—a bee-journal and not a political or religious magazine. I don't doubt that you are sincere in your convictions on the subject, but that does not justify you in letting your private opinions interfere with your business journal.

I have to-day read your issue of Sept. 15, and in our Homes you quote a lot of sayings from other men, and therefore I think that you indorse the same; for instance, a religion that leaves the saloon undisturbed is not worthy to be called after the name of Jesus Christ. You don't seem to know, or have forgotten, that Jesus was supposed to have made wine out of water; also another one—that, no matter whether a man be rich or poor, white or black, educated or not, he has the same chance and gets a square deal in this glorious country of ours. Now, you don't believe that yourself, do you? Certainly not; then why do you print such trash as that, and expect any man with only an excuse for a brain, to read any thing like that? As for myself, you need not think I am a drunkard; but I do take a glass may be once every two weeks, and should object to any man taking my personal liberty away from me and telling what to drink. Hoping you will excuse my criticism I remain, EDWARD FRITZSCHE, Richmond, N. Y., Sept. 2.

Thank you, friend F., for your frank and honest criticism. Yes, it is true that my temperance and other talks come in a bee-journal; but if you will look on page 1106 of the journal you allude to you will find that we announce in every issue that our journal is

"DEVOTED TO BEES, HONEY, AND HOME INTERESTS."

In regard to this matter that has been so much discussed for ages, about Christ turning water into wine, I think the general decision has been that Jesus never offered any intoxicating drink to anybody. We have now what we call "wine" in our own cellar; but it is the pure juice of the grape, without any fermentation whatever, and is what is sometimes called "communion wine."

In regard to keeping wine or beer in your own home, and taking a glass say once in two weeks, as you suggest, the Anti-saloon League (of which

I am proud to say I am a charter member) has *never* undertaken and does not undertake *now* to dictate what you shall eat or drink in your own home. We have nothing whatever to do with that, although the brewers and saloon-keepers have often brought the matter up as you do. It is against the open saloon as it is now managed that we wage war. The contrasts between towns and cities where they are run with saloons and without saloons, that are now being published, with the facts and figures from all over our land, is, I think, a sufficient reason why saloons should be put out of business, just as you see has been done by our victories of late.

Last, but not least, you quote what that poor foreigner who came to our own country says in regard to the American flag. That was his statement. It is our privilege, every one of us, to decide whether the American flag does mean all that or not; and I think you will agree with me that, at least as long as you continue here in America, the American flag *should* mean, "A square deal to every one, no matter whether he is rich or poor, black or white, educated or uneducated." If it does not mean all that just now, will you not, dear friend F., make it your business to join hands with the rest of us and *make* the "stars and stripes" really *mean* just what that poor man said they meant to him. May God bless and enlighten you and all others who feel as you do about the work that is being done just now in the way of banishing the saloons.

Just a word in closing. While I have had kind words in almost every mail for months past in regard to my temperance talks, there have not been half a dozen who have taken the position that you do; and there was just one other person who threw it into my teeth that the American flag does not mean what I seemed to imply it meant. This person lives in Canada. He said that the statement that you have referred to in regard to the American flag was a lie, and that I knew and that Bishop Wilson knew it was a lie. This brother did not sign his name to his letter, and so I could not reply to it. But I happen to know, however, that he is by no means a fair representative of our Canadian brethren.

HOW THE POPULAR MAGAZINES ARE GOING DRY.

November 29 was the World's Temperance Sunday, and among other good things in the *Sunday School Times* for that date was an article headed "How the Popular Magazines are Going Dry." It seems there are about 60 different magazines published now in the United States; and of these they give a list of 40 that declare boldly:

We do not publish any advertising matter pertaining to intoxicating liquors. This publication will not lend itself as the medium to introduce into the family circle habits other than good.

May the Lord be praised for the above decision. Quite a number of the remaining 20 say they have not yet made up their mind, or do not know exactly where to draw the line, or something of that kind. This list does not include the agricultural or other class papers; but may the Lord be praised *again* for the fact that our agricultural and rural periodicals, nearly all if not quite all of them, are taking a *higher* moral stand, if any thing, than the magazines, and higher than a good many of the religious periodicals. Now, if

we could have just one daily paper—that is, a daily published in some of our large cities like Cleveland, that would rule out whisky advertisements, I should have great faith in the theory that the world is growing better. It is true we have excellent temperance editorials in these same papers; but what do you think of a paper and its management when we are told by our highest medical authority that intoxicating liquors in any form are always dangerous and harmful, inducing pneumonia, consumption, and allied diseases, and then be told in the advertising columns that Duffy's malt whisky is the *best remedy in the world* for the same disease? These editors know perfectly well that the whisky advertisement contains the vilest falsehoods, and yet they keep filling their columns so long as the money is forthcoming to pay for them. Now, is it not time for the people at large, who are working so hard for prohibition, to declare that they will tolerate no periodical in the home circle that advertises whisky or intoxicating medicines—not even the *daily* paper? God speed the time when this may come to pass.

DRUNKEN CHAUFFEURS.

The clipping below seems to fit certain conditions very well. I think it might have a conspicuous place in GLEANINGS with an editorial footnote on the extenuation plea. Boston surely deserves the chromo. It has got to be too common that one guilty of misdemeanor and murder pleads insanity or the *drunk*, expecting leniency, when, in fact, the punishment should be doubled, as they were drunk. An intoxicated young man should not be allowed on the streets. It is a disgrace to a town to have a boy drunkard.

Norfolk, Va., Nov. 4.

F. DANZENBAKER.

PROGRESS OF CIVILIZATION.

In Boston they seem to have solved one of the problems of modern civilization. A speed maniac there was sent to jail for six months for reckless driving of a machine. When he pleaded as extenuation that he had been drinking he was in addition fined for intoxication.—*Baltimore American*.

Amen to your suggestions, friend D. I have wondered whether some of these distressing accidents, if not most of them, that have resulted in the loss of life, were not caused by drink. There certainly should be some strict and severe laws in regard to permitting any man, even a *moderate* drinker, from running an automobile, no matter if it belongs to himself or to somebody else. Such a man might in some ways do even greater harm to society in general than a drunken engineer on a locomotive. If there are no laws in regard to the matter, let us quickly get about it and frame some. And I heartily agree with you in your closing sentence, that every town and every community is disgraced by the spectacle of a single "boy drunkard" on the streets.

A "RED-HOT" TEMPERANCE LETTER.

Dear Friend Root:—Praise the Lord! My telephone-bell just rang; and on going to it my cousin in town said, "The local-option bill has passed! The bells are ringing! That is all we know." But it is enough! I suppose she means the De Pauw University and church bells are ringing, as they well may. Praise the Lord! At last we are freemen, and can go to the ballot-box and vote prohibition for our counties. Our hands have been tied these many years; but now we've got the Devil by the nape of the neck. We'll chuck him into the machine, and scrunch him like a pea between millstones! The imps of hell, the sons of Belial, or whatever you please to call the villains who have been selling liquid damnation, will be driven outside the camp into the wilderness. Praise the Lord! If any repent and forsake their sinful calling, they will be allowed to go to work and become honest, respectable men; but if they do not they will be kicked into some less intelligent community or thrown into jail. The saloon is doomed! Shout it from the housetops! At last we've got the ballot in our hands, and the saloon is doomed! Every good citizen is delighted. Of course, we have a long and

bitter fight before us. Evil, like thistles and burdock, will never be exterminated until the millennium. But constant care and hard work can keep our fields reasonably clean.

Governor Hanly deserves great credit for calling the special session and forcing the bill through the legislature.

Recently Bishop Matthews, of the United Brethren Conference, nominated Hanly for President. I believe you have done the same. Go ahead! I am with you. DANE S. DUNLOP.

Greencastle, Ind., Nov. 11.

"CHURNLESS" BUTTER MADE IN ONE MINUTE, ETC.; THE GREAT \$5.00 SECRET.

We have had the "fireless" stove, the "lampless" brooder, and now we have the *churnless* butter. Some of the agricultural papers (I am glad to say only a *few* of them) have given a whole double-width column to this "great" invention. Here is the way it reads:

A new patented churnless butter made in one minute. No more work, no more worry. We can give you knowledge of how to make good wholesome butter in one minute. A patent was given by the United States Government for this process, and it had to be healthy and pure.

Now, that last sentence kind o' puzzles me. Is it the United States *government* that has to be "healthy and pure" or is it this wonderful process? We give it up. Below the above is a picture of a pretty girl with a bowl and spoon, making butter "in a minute." A little further down is a barefooted boy working an old-fashioned churn. And, by the way, why in the world *should* people fuss with churns of any kind when we can make better butter in one minute without *any* machinery? There can not be any hook or crook in the matter, because the advertisement goes on to say:

This process will not fail. It will do every thing we claim for it; if it will not, we will return the money you have paid us for it. Health officers, dairymen, and scientists have pronounced it excellent.

Now, the price of this wonderful secret for a family right is \$5.00; but the enterprising agricultural paper has made arrangements to send the whole thing for only \$3.00, and will throw in a subscription to their paper for three years. We scraped up the \$3.00, and watched the mails breathlessly (?) for almost two weeks. Finally a single sheet of paper, printed in red and black ink, so as to make it look like a patent-right deed, came to hand containing this wonderful process, and we take pleasure in giving it entire to every reader of GLEANINGS free of charge. I am sure you will all be glad and thankful, especially after you read it over. Here it is:

CHURNLESS-BUTTER PROCESS.

Put fresh milk in suitable vessels to heat well. Heat over a slow fire. When milk has been thoroughly heated (not boiled) set in a cool place where it will get cold. When the cream has well risen, which will take from twelve to twenty-four hours for the best results, take off the cream with as little milk as possible, put in any vessel suitable to make butter in—this should be left in a cool place until the cream has gotten into a stiff condition. In cold weather the cream should be about 65 degrees. When it is stirred with quick strokes of a common butter-paddle, the butter will be made in about one minute if handled correctly. Wash and salt the same as other butter. In summer time or warm weather the cream should be kept in as cool a place as possible, and always begin to stir as soon as taken from the cool place; the weather being warm, the butter can be made quickly, even when the cream is at from 40 to 50 degrees. If cream is too warm it will become thin and take longer to make the butter, and when made will be soft and oily.

If buttermilk is desired, take the sweet milk after the cream has been taken off, cut it in a suitable place to sour just as if you were preparing to churn the old way. When it is in a good clabber state, stir with spoon and make buttermilk of the finest quality. The sweet milk, after cream has been removed, is nourishing and wholesome.

Now, may be I shall get sued and put in jail, or be sent to the penitentiary for violating the patent laws; but the sheet of paper printed in red ink did not tell when the patent was granted. It has no date on it, and just one single signature. If I get put in jail I am sure the great lot of friends I have will help me to get out quick.

CHURNLESS BUTTER—STILL MORE ABOUT IT.

Mr. A. I. Root.—The churnless-butter process is no fake nor humbug, as your friend H. W. Collingwood puts it. It is just what it claims to be, for I have used it since last winter, when I first heard of it. It *does* make as firm good butter as ever came from any churn, and very much better than comes from some churns. It is a labor-saving process. It may possibly have been known long ago, but that did us of to-day no good until some one brought it to our notice. We obtained the process more out of curiosity than because we had any faith in its doing any thing. I now have faith, and lots of it.

MRS. WM. MEYER.

Tecumseh, Okla., Oct. 12.

Well, my good friend, I am very glad indeed to find that one woman, at least, is pleased with her investment; but do you not think it would have been more sensible, and much better all around, to have this simple process (which you admit is probably old) given on the pages of our home journals, just as we have given it, instead of asking each person to pay three or five dollars for the great secret as you have doubtless done?

NAVIGATING THE AIR BY THE WRIGHT BROTHERS AND OTHERS.

The latest report we clip as below from the *Chicago Daily News*:

WINS IN FIVE MINUTES A PRIZE THAT NATHAN HAD BEEN CAREFULLY PREPARING TO CONTEST FOR.

LE MANS, NOV. 14.—"I might as well have that 1000 francs (\$200), even if I don't exactly need it," remarked Wilbur Wright yesterday afternoon after suddenly deciding to try for the prize offered by the Aero Club of the Sarthe department for an aeroplane flying as high as 100 feet. In another half-hour he had shot up into the air on his machine without using the starting apparatus, and soon he soared twice around the big Avours field at a height of fifty feet above the small captive balloons which marked the 100-foot height.*

It took Wright five minutes to win the prize, which several French aeronauts have been carefully preparing to acquire for several weeks past—not for the sum involved, but for what the Aero Club calls "the peculiar distinction of not only flying but flying at high altitudes."

GIVES LESSONS IN FLYING.

Wright is giving the last lessons in flying to a number of different persons, according to his contract. When these are concluded he will go to America via Cherbourg, because in the neighborhood of that seaport there still remains another prize to take—that for the straight-distance flying.

Yesterday's flight, made without using the sort of catapult which has caused so much gossip, has settled the question of the machine's being handicapped for long flights.

We gather from the above that our friend Wilbur has learned the trick of starting without his "catapult" (the starting apparatus I described in our last issue), and, in fact, I rather suspected they would, after they became better acquainted with the machine and its capabilities. The following clippings from *Aeronautics* for November give us glimpses of what is going on in the aeronautic world:

It has been figured that the total duration of Wilbur Wright's 72 flights in France, up to Oct. 15, inclusive, amounted to 13 hours 49 minutes (will it take place "all in one sitting" next year?). Thirty persons have been carried, including three women and a boy, a total distance of 431 miles.

On October 15, two flights were made of 1 minute 35 seconds,

*In a second flight of 11 minutes' duration, Mr. Wright is said to have risen to a height of 196 feet above ground. These are the first official records for height that the American aviator has made.—*Scientific American*.

and 2 minutes 35 seconds, carrying MM. Mercanti and Gasnier. Wright stopped his motor when at a height of 120 feet and made a long smooth glide to earth.

On the 28th Count de Lambert began his lessons as an apprentice-aviator. For his first lesson he had three flights of 12, 8, and 15 minutes. On the following day the master and pupil made three more, 7 minutes and 5 seconds, 17 minutes and 34 seconds, and 19 minutes and 25 seconds.

In a recent interview Wilbur Wright stated that the success of his machine was especially due to the high efficiency of its propellers, that light motors were not essential, and flight could as well be attained with a steam-engine. He claims 70 per cent efficiency for his propellers.

Mr. Franz Reichel, who made the first "hour flight" as passenger on the Wright machine in France, has been the first one to describe accurately the wonderful sensation of human flying. He says: "If in an aeroplane going straight ahead is a delicious sensation, turning is a veritable intoxication. It was during these evolutions that I felt that the air was conquered, well conquered."

It is said that fully one hundred Wright aeroplanes have been ordered from the Societe Navale de Chantiers de France. They will be fitted with Bollee engines and be sold at \$5000 apiece. Count de Lambert and Vicomte de La Brosse will receive the first two. (This seems an "awful lie.")

On the 28th Farman made another long flight and again another of about a mile with M. Painlevé aboard. Following these, other alterations were made and for the first time in the history of aviation a flying-machine traveled from one town to another.

NEW PRIZES—IN FRANCE.

1000 francs by Aero Club de la Sarthe as a height prize, with conditions making it possible for Wilbur Wright to compete (he was excluded from the other prize for height for not starting by his own power only). Captive balloons must be flown over at a height of 30 meters.

First, it is an agreeable surprise, at least to myself, to know that thirty persons, including a woman and a boy, were carried; and the second item declares positively that the machine actually carried *two people* besides Mr. Wright himself. If they would only tell us the total weight of the three persons we could judge a little better of the capacity of the machine for carrying burdens. I am very glad indeed to know that 100 machines have already been ordered, and that the others will be sold as low as \$5000 apiece. That is not any more than some of our automobiles cost; but I do not exactly understand the footnote by the editor of *Aeronautics*. Does the "awful lie" refer to the 100 machines to be built, or to the price, or to the fact that the Count de Lambert and the Vicomte de la Brosse will receive the two first?*

Our last item tells us that Farman is also making progress, and that he too is carrying a passenger; and that he has succeeded, at least to a small extent, in traveling from one town to another. When actual flying-machines begin to traverse the country by going from town to town as automobiles do, then we shall see such a stir throughout the whole wide world as has never been seen before.

My last clipping I have given to explain *why* it was that Wilbur Wright was induced to try climbing up into the air without the use of the catapult. Oh! it is not glorious to be alive when so much is going on in the way of invention and progress—not only on the face of the earth, but away up into the beautiful air above us, and, with a prospect in future, of enjoying companionship with the very clouds that float above us?

*Since the above was in type I notice by one of the papers that Wilbur Wright has at least once shut down the engine while high up in the air, and made a gradual glide down to the ground in perfect safety. This refutes the statement made by several of the papers that disaster would surely follow in case of the breaking-down of the engine. If I am correct, the engine might be stopped for repairs while up in the air, and, if up high enough, and the repairs did not take too long, the difficulty would be little if any greater than in stopping the engine of an automobile for repairs.

HEALTH NOTES

ROBBING SICK PEOPLE.

The following, clipped from the *American Issue*, explains itself:

WHISKY AND CONSUMPTION.

In an address before the Mississippi Valley Medical Association in Louisville, Ky., on Oct. 15, Dr. T. D. Crothers, of Hartford, Conn., editor of the *Journal of Inebriety*, said:

The so-called moderate use of spirits, which diminishes the vitality and lowers the resisting power of nature, is an active cause of consumption and typhoid fever, and is accountable for over 30 per cent of the cases of pneumonia. In fact, there is no disease known, and no surgical operation performed, that is not influenced and made worse by spirits.

The present efforts of laymen and societies to correct and prevent this evil as a moral one is a sad reflection on the stupidity of the medical profession.

And yet every daily paper published in any of our large cities is filled with advertisements recommending whisky, not only for consumption but almost every other known disease, from Duff's malt whisky for people toward a hundred years old to the Wilson whisky advertised on the waste-paper baskets all over the great city of Cleveland, on which we see advertising urging sick persons to *drink whisky* to make them well. We have as a nation succeeded in stamping out diphtheria and typhoid fever by *compelling* people to use pure water; but what is being done to prevent them from drinking bad whisky, even when this whisky is *worse* than poison? When one dies from typhoid fever he dies an honest, innocent death; but when he dies from the effects of whisky he fills a drunkard's grave. In the latter case, however, his friends do what they can to conceal the fact. Is it not almost time that Christian people, and temperance people too, refuse to take a daily paper or any other kind that parades such terrible falsehoods in regard to the use of whisky for curing disease? How about Chemist Wiley's remarks in regard to misleading and hurtful advertisements?

After the above was dictated I found the following in the *St. Louis Times*:

AD MEN WARNED NOT TO MISLEAD PUBLIC; LAW WILL PUNISH DISHONEST ADVERTISERS, SAYS GOVERNMENT PURE-FOOD EXPERT.

NEW YORK, Nov. 11.—Addressing the members of the Sphinx Club of Advertising Men, Dr. Harvey W. Wiley, head of the Government Pure-food Bureau, warned them that the publication of dishonest advertisements would land them in the toils.

"Let me tell you right now," he said, "that no advertising is honest which makes any misleading statement about the quality or benefits of the goods advertised. I would not like to see any of you brought up before me in Washington for any such offense, but if you continue, I will get you—or, rather, the law will."

Referring to the presence of deleterious compounds in almost all foods, Dr. Wiley said he had revised his morning prayer to read: "Give me this day my daily sins, and forgive me my bread, as I forgive those who gave it to me."

To the above I wish to add, three cheers for Professor Wiley! and let us each and all see to it that the way of the transgressor is made hard. When you get swindled by some misleading and dishonest advertisement it is a Christian duty to have those who deceived you brought to justice.

TROUBLE WITH OUR DIGESTIVE ORGANS.

I wish to suggest that the cause of Mr. Bischoff's sore stomach, as described on page 1272, Oct. 15, is that he is slightly overeating. Let him go without breakfast until 11 o'clock, or noon, and in a week or two his stomach will recover.

If the stomach feels very faint at about 9 o'clock, when doing without breakfast, take a small glass of water and put into it four tablespoonfuls of milk, and honey the size of a hickorynut. Mix them well and sip slowly with a teaspoon. This should satisfy the stomach until 12 or 1 o'clock. Sometimes going with-

out breakfast causes a headache. If the omission of breakfast is *continued*, the headaches will finally stop.

The best remedy I have ever found for dyspepsia, or the disagreeable indigestion of food, is to eat a piece of raw cabbage at the close of the meal. Eat the stump and some of the green leaves on the outside. Get the cabbage fresh from the garden, and one of the smaller-sized ones, say a head about 4 inches in diameter. Cut it into quarters, and eat about one quarter. Use a little salt if it tastes better. I consider the cabbage a great deal better than any kind of fruit. If we use milk with our meals it should be mixed with four-fifths water, and slightly sweetened with honey. Sugar and bread cause the sore stomachs, most likely. Their carbons are dead.

In regard to the boiled wheat mentioned by Dr. Miller in the sixth paragraph on page 1243, I would say that, if the wheat is soaked through the night, it will boil in an hour or less instead of 2½ hours. After boiling the wheat let it stand in a warm place until it begins to *smell* of fermentation. It should not ferment enough to be perceptible to the taste. Taste and smell are two different things. Then grind it through a mill and boil it in a vegetable soup for five or ten minutes in fitting it for the table. After the fermentation the heat splits up the starch-cells. I have used wheat in this way for years.

Chatsworth, Cal., Nov. 7.

C. W. DAYTON.

The above reminds me that years ago I read that cabbage is more digestible when raw than it is when cooked; and oftentimes when I was running a market-wagon I found a small head of Jersey Wakefield cabbage that had just burst open would often afford me quite a luscious lunch. In fact, I used to put these cracked heads on the table, saying that I preferred them in that way to any of the various cooked cabbage, and this raw cabbage always agreed with me nicely. You see this is a strong argument in favor of "uncooked foods." Raw apples seem to me now to agree with me much better than any kind of cooked apple. I feel sure that most of us will find we can get benefit by using a certain amount of uncooked fruits and vegetables at every meal. And just see what a saving it is in time and fuel for the good wife!

BEE-KEEPERS AND POULTRYMEN; ARE THEY AS A RULE ABOVE THE AVERAGE IN THE WAY OF MORALS AND ABILITY?

It has been many times suggested—at least through the bee-journals—that bee-keepers are as a rule good, clean, and progressive men. I do not remember to have heard, however, that those who are in the poultry business have better morals than the average humanity; but it begins to look a little that way. Mr. J. F. Schureman has just given to the world a little book entitled "Harold Ware." While it is a story-book, and a most fascinating piece of fiction, the author manages to touch on the work of the Anti-saloon League, the labor troubles, both bees and poultry, and through it all to hold up the spirit of the Lord Jesus Christ as we see it exemplified through the hearts of the common people when they happen to get started in the right channel. The price of the book is 25 cents, in neat paper binding, or 50 cents in cloth. Address J. F. Schureman, Marseilles, Ill., editor of *Commercial Poultry*.

Convention Notices.

The Colorado bee-keepers will hold their annual convention in Denver, at the American House, corner of Sixteenth and Blake, Dec. 8 and 9. Program later.

N. L. HENTHORNE, Sec.

A meeting of the bee-keepers of Eastern Illinois and Western Indiana will take place at the court-house in Watseka, Ill., Dec. 15 and 16, at 10 A.M. A good program is prepared. A question-box will be provided. Other business will be taken up. All interested will please attend.

RAY ENSINGER, Sec.



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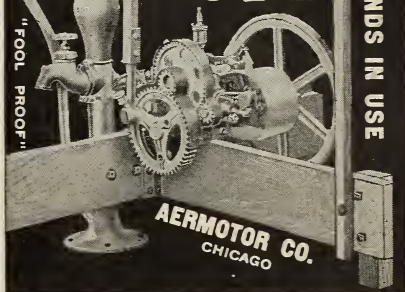
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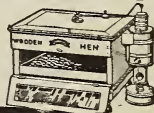


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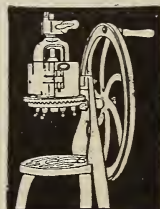
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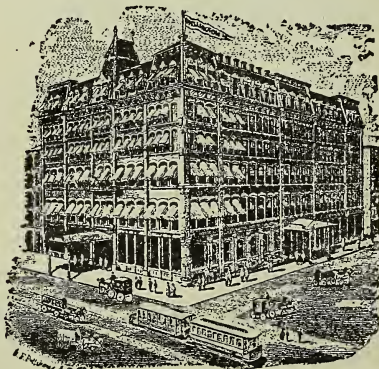
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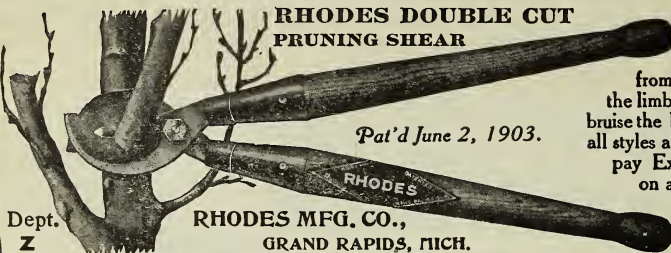
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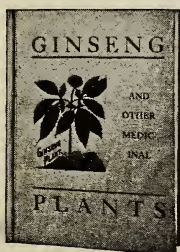
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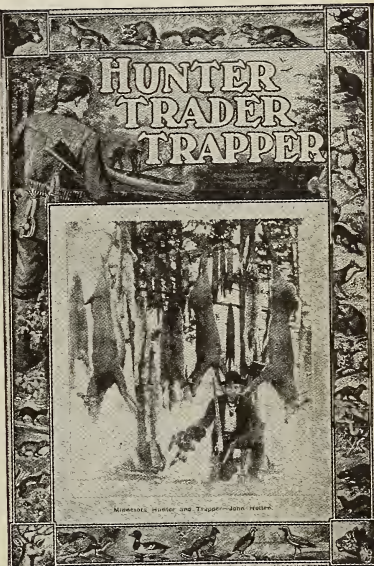
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BEE HUNTING.—There are wild bees in most forests. This book tells how to line bees to trees, etc. 80 pp. 25 cents.



A book of valuable information for growers of Ginseng and Golden-Seal, as well as collectors of medicinal roots, barks, leaves, etc. Tells how to grow and where found, medicinal uses, value, etc. Contains 317 pages, 57 inches, and 130 illustrations.

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A. U. HARDING PUBLISHING COMPANY, COLUMBUS, O.

These Books are all Practical and Will Prove a Good Investment. Ten cents may be deducted from each book when two or more are ordered. 32-page booklet, describing magazines and books, free.

CUTS USED IN THIS MAGAZINE
ARE FROM
THE MUGLER ENGRAVING CO.
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1000 FERRETS. Some trained.

Price list and booklet mailed free.

N. A. KNAPP,

ROCHESTER, OHIO.

HILTON'S Strain of Bees and What They Did

Dear Friend Hilton:—The two three-frame nuclei I received of you May 21 were received in fine condition, and the red-clover queens proved themselves worthy of the name. I never saw finer or gentler bees. They were transferred to ten-frame hives and full sheets of foundation. I now have four strong colonies, with plenty of stores for winter, and have taken 195 lbs. of fine extracted honey, mostly clover. I want two more nuclei for next spring delivery, and my neighbor wants another. You may use this letter or any part of it as you choose.

Gratefully yours,

Rhineland, Wis., Sept. 14, 1908. G. C. CHASE.

In addition to the above I have sold friend Chase about \$200 worth of ROOT GOODS, which deserve some credit for the above results—the best of every thing is none too good. ROOT'S GOODS and GLEANINGS helped. If you are not taking GLEANINGS, WHY NOT? For an order of \$10.00 before Jan. 1 I will give GLEANINGS one year; \$20.00, two years; \$30.00, three years; or you may have GLEANINGS from now to the end of 1909 for \$1.00; two years for \$1.50; three years for \$2.00. SEND FOR MY 40-PAGE CATALOG. CASH FOR BEESWAX, or will exchange goods for it.

GEO. E. HILTON
FREMONT, MICH.

WESTERN Bee-keepers

.. will ..

SAVE TIME AND FREIGHT

by ordering ROOT'S GOODS
from Des Moines, Iowa.

A FULL LINE OF

Shipping-cases, Honey-extractors,

and all other seasonable goods now
on hand.

We are also prepared to supply goods for next season's use at special discounts.

Estimates cheerfully given. Send us a list of your wants, and get our net prices by letter.

JOS. NYSEWANDER
565-7.W.7th St., Des Moines, Ia.

Merry Christmas



We're talking to the wives and daughters in the families where GLEANINGS goes. Why don't you get *him* something that will suit him better than any thing else for Christmas, and that is to renew his subscription to GLEANINGS or get him a copy of the new 1908 edition of the A B C and X Y Z of Bee Culture?

Offer No. 1

Gleanings one year, and a bee-veil with a silk tulle front, \$1.15.

Offer No. 2

A B C and X Y Z of Bee Culture, 1908 edition, and bee-veil, both postpaid, \$1.65.

Offer No. 3

Gleanings one year, A B C and X Y Z of Bee Culture, and bee-veil, all postpaid, \$2.40.

EXTRA

The Christmas number of GLEANINGS, and all of 1909 are included.

We will mail to separate addresses parts of the same offer.

When requested we will send a personal letter to any address announcing the offer as a Christmas gift, and giving the name of the giver.

We will mail so as to reach destination as near Christmas Day as possible.

No matter where you are located in the United States, you can take advantage of these offers.

M. H. Hunt & Son
Lansing, Michigan

UDO TOEPFERWEIN

W. M. MAYFIELD

NEW STOCKS

During the season just closed we have, on account of the unusual demand for our supplies, reduced our stocks to a minimum.

VISIT TO THE FACTORY

Knowing so well the requirements of the bee-keepers of the South, I decided to visit the factory of The A. I. Root Company and personally select our stock for the coming season. This I am now doing, and will be back in San Antonio to give personal attention to the trade shortly after this announcement appears. While our goods have always been of first quality, this personal selection will assure even more uniformity than ever before, and I want to say to my bee-keeping friends that, while I am well acquainted with all of the leading lines of bee-keepers' supplies, I have never seen any thing equal to the quality of those which I now have.

JOB LOTS

Notwithstanding the reduction of our stocks as above noted, we have on hand a few desirable lots of shipping-cases and a few other goods for which we have but a very limited demand in the South; and, rather than carry these in stock, we have decided to close them out. We refer intending purchasers to the list of shipping-cases published in the November 1st issue of GLEANINGS, page 1337. For further description of these and similar goods, write us.

HONEY-CANS

As usual, we are prepared to supply all styles of honey-cans in all sizes, and solicit your inquiries and patronage. Our contracts with the factory enable us to furnish these at lower prices than any other Southern concern, and the quality is the best.

WEED FOUNDATION

It will be remembered that we have a full equipment of Weed machinery, so that bee-keepers having large lots of select wax which they desire worked into foundation by the pound can have it done at San Antonio, and save heavy transportation charges. We also furnish the same at the usual catalog prices. While on my visit to the factory I have selected additional machinery to keep our equipment up to the best.

Soliciting your continued patronage I am yours truly,

UDO TOEPFERWEIN.

TOEPFERWEIN & MAYFIELD

1322 South Flores Street

SAN ANTONIO, TEXAS

FASHION BOOK FREE!

I want to send you my handsome new book showing hundreds of latest styles with illustrated lessons on cutting and dressmaking. I will agree to sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

HOW I DO IT.

I publish the **FARMER'S CALL**, a weekly paper for every member of the family. An especially interesting feature each week are the children's letters; and the Woman's Department is unusually strong and instructive. Among the special features for Women folks, is its fashions in which I show the **5c** patterns. Let me help you to save money.

MY SPECIAL OFFER

Send me 25c and I will send you the **Farmers' Call** every week (over 1000 pages) for one year and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c**. I can sell them for 5 cts because I buy them by the thousand and don't make any profit. I don't want the profit. I want your subscription to the **FARMER'S CALL**. You will save many times the cost of my offer in a year. **WRITE TO-DAY!**
JOHN M. STAHL, Dept. G, QUINCY, ILL.



Flower Language

Post Cards

A series of 12 beautiful cards

FREE

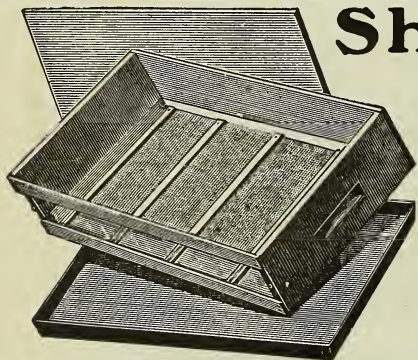
TO YOU

Do you know the language the flowers talk? Here is a wonderful series of twelve beautiful Flower Language Post Cards that I will send to you absolutely free. Only send me ten cents for a six month's trial subscription to my big 24-page journal, **THE GLEANER**, which is of interest to every member of the family, and I will send you all twelve of these beautiful cards absolutely free as a present. Each card portrays a different cluster of life colored flowers arranged in artistic designs reproduced from paintings by J. Leslie Melville. Each card has a beautiful poem written by O. Preston Wynne, revealing the language of the flowers in verse. Think of it.

12 Beautiful Post Cards

and **THE GLEANER** for six months on trial for only 10 cents and **REMEMBER** that if you will write me at once I have a surprise for you. Don't forget to ask about it. Don't lay this down and say "I'll send for these tomorrow;" **WRITE RIGHT NOW.**

G. H. SLOCUM, Publisher
904 Majestic Bldg. Detroit, Mich.



Shipping-cases

for any number or size of sections desired. These cases are made of fine white basswood, and the workmanship is first class. Owing to the shortage in the honey crop last year we have a good stock on hand and can make immediate shipment.

Twelve-inch case, with follower, to hold 24; or eight-inch case, with follower, to hold twelve beeway sections, shipped when no size is mentioned. All cases single tier unless otherwise ordered.

Honey-packages in Tin.

Standard packages for storing and shipping extracted honey. Less chance for leakage or taint from wood; being square they economize space. Five-gallon cans boxed two or one in a box; gallon cans 10, 1/2-gallon cans 12 to box. Five, one, or 1/2 gallon cans not boxed if desired. Prices on application for any quantity.

Place your order now; prices and prompt shipment guaranteed.

MINNESOTA BEE SUPPLY COMPANY
123 Nicollet Island, Minneapolis, Minn.

A BIG RENEWAL OFFER!

TWO BEE-PAPERS FOR ABOUT THE PRICE OF ONE.

American Bee Journal, 1 yr., \$0.75

Gleanings in Bee Culture, 1 yr., 1.00

\$1.75

OUR PRICE

\$1.25

FOR THE TWO

New subscribers at same rate. Sample copy of Bee Journal free. Send all orders to—

THE AMERICAN BEE JOURNAL, .. 118 W. Jackson, .. CHICAGO, ILL.

PATENTS.

Twenty-five Years' Practice.

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THE
A
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OF

BEE CULTURE

The only cyclopedia on bees, 536 pages, fully illustrated. Every phase of the subject fully treated by experts. Price \$1.50 postpaid; money refunded if unsatisfactory. Catalog of supplies and sample copy of our semi-monthly magazine, *Gleanings in Bee Culture*, free if you mention this paper.

Gleanings in Bee Culture, Medina, Ohio,

Hammer Free!

With Every Order of Supplies of \$5.00 or Over.



This is the handiest tool for nailing up hives, frames, and all parts, or for opening up hives. Made of steel, nickeled.

Three per cent discount off all prices in catalog.

FULL LINE OF ROOT'S GOODS

NO CHARGE FOR DRAYAGE.

John N. Prothero
Dubois, .. Pennsylvania

BIENZÜCHTER!

von Deutschland, Schweiz, Oesterreich,
u. s. w., senden Sie fuer unsere
1907 Preisliste von

Bienenwohnungen, Rauchapparaten,
Hon gschleudern, Handschuhen,
Bienenschleirn, Walzwerken,
Futterapparaten,
Porter's Bienenflucht,
Fluglochschiebern für Kasten,
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Weiselkäfigen,
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raten, und allen anderen
Bienengerätschaften der

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Grosste Fabrik Ihres gleichen in der Welt

EMILE BONDONNEAU

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142 Faubourg Saint Denis, Paris, 10me.

Rock-bottom Prices

.. ON ..

Root Quality Bee-Supplies

Together with the very best shipping facilities over some thirty odd railroads and steamboats is what we can offer bee-keepers north, east, south, or west of St. Louis. Simply send us a list of goods wanted, either for immediate or future delivery, and we will quote you our best special cash price, either delivered at your station or on board cars at St. Louis.

Every day delayed, now counts.

BLANKE & HAUKE SUPPLY CO.

1009-11-13 LUCAS AVE.
ST. LOUIS, MO.

ORDER EARLY

**Secure
the
Benefit
of
Discount
on
Fall Orders**

For November, 5 per cent discount.
For December, 4 per cent discount.

THE A. I. ROOT CO.
SYRACUSE, . . NEW YORK

CLASSIFIED ADVERTISEMENTS

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

Honey and Wax for Sale

FOR SALE.—To reduce stock I offer for sale as follows; 26 cases of stock No. 40, and 40 cases of stock No. 44 at \$10.80 per case of two 60-lb. (new) cans. This is a raspberry-basswood blend, and is the cream of two apiaries; being extracted from select all-sealed upper stories. A third of a century's experience in the production of fine extracted honey. Ask for my little circular "A Word about Extracted Honey;" this will explain why it pays to buy this delicious stock.

E. D. TOWNSEND, Remus, Mich.

FOR SALE.—My new crop of white-clover extracted honey. Honey has been left in full charge of the bees for three weeks after harvest, and is rich, waxy, and of fine flavor, and is as good as a specialist can produce. Price is 8c. per lb. by the case of 120 lbs. or for the entire crop. Cash to accompany order.

LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

RASPBERRY HONEY, left on the hives until thoroughly ripened; thick, rich, delicious; put up in new 60-lb. tin cans; \$6.25 for one can; two or more cans at \$6.00 per can. Sample ten cents, and the ten cents may apply on the first order.

W. Z. HUTCHINSON, Flint, Mich.

FOR SALE.—Buckwheat, amber, No. 2 white comb, \$2.50 per case of 24 sections; unfinished and candied comb, \$2.00 per case; amber extracted ($\frac{3}{4}$ clover), two sixty-pound cans to case, at 8 cts.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

FOR SALE.—Choice extracted honey for table use, gathered from clover and basswood—thick, well ripened, delicious flavor. Price 9 cts. per lb. in 60-lb. cans, two to case. Sample, 10 cts.

J. P. MOORE, Queen-breeder, Morgan, Ky.

FOR SALE.—I have some extracted honey, well-ripened, fine, clover and basswood, in new five-gallon round cans, at \$5.50 a can; sample free; delivered f. o. b. cars here; ought to suit anybody.

MATHILDE CANDLER, Cassville, Wis.

FOR SALE.—Clover, amber, and buckwheat extracted honey. Table quality. Write for prices, stating your needs.

C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Choice white-clover extracted honey, in new 60-lb. cans, or any shape desired. Ripened on the hives and guaranteed strictly pure. Sample free J. F. MOORE, Tiffin, O.

FOR SALE.—Fine extracted white-clover honey; also light amber fall honey, put up in barrels, 60-lb. and 10-lb. cans. Write for prices.

DADANT & SONS, Hamilton, Illinois.

FOR SALE.—Buckwheat extracted honey, 160-lb. kegs at $6\frac{1}{2}$ cts.; 60-lb. tins at 7. J. I. PARENT, Ballston Spa, N. Y. Rt. 2.

Honey and Wax Wanted

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity.

R. A. BURNETT, 199 South Water Street, Chicago, Ill.

WANTED.—25 tons of fancy comb honey. Write, stating particulars, to C. M. CHURCH, New Kensington, Pa.

WANTED.—Choice extracted basswood honey. Prompt payment on receipt. Will pay 7c in new cans f. o. b. West Bend.

H. C. AHLERS, West Bend, Wis.

WANTED.—Choice white-clover honey in 60-lb. cans, also choice white-clover comb honey in Danz. sections, No. 1 and No. 2. State price f. o. b. here.

JOSEPH W. LEIB, 563 S. Ohio Ave., Columbus, O.

Bees and Queens

FOR SALE.—Moore's strain and golden Italian queens, untested, \$1.00; six, \$4.00; twelve, \$7.00. Carniolan, Banat, and Caucasian queens, select, \$1.00; six, \$5.00. Tested, any kind, \$1.25; six, \$6.00. Choice breeding queens, \$3.00 each. Circular free.

W. H. RAILS, Orange, Cal.

FOR SALE.—Italian bees and queens now ready. Untested, \$1.00; tested, \$1.50. Bee-keepers' supplies, Root's goods. Send for prices. Eggs from Silver-laced Wyandotte poultry.

N. V. LONG, Biscoe, N. C.

Wants and Exchanges

WANTED.—Bees for second-hand hives, thoroughly cleaned by steam; size 16x16; 10 $\frac{1}{2}$ inches deep, ten-frame; suitable for the production of comb or extracted honey. Many of these hives are almost new. Would consider sending a carload to some responsible Texas apiarist in good locality for increase to fill on shares.

THOS. J. STANLEY, Manzanola, Otero Co. Colorado.

SWAP.—Round clear glass jars with screw-tin caps, and waxed; linear of 22-oz. capacity (nearly 1 $\frac{1}{2}$ lbs.), in reshipping-cases of 2 doz. each; 6 cases at \$5.50, in exchange for choice white-clover extracted and comb honey; 12 cases or more at \$5.25 for each 6 cases.

JOSEPH W. LEIB, 563 S. Ohio Ave., Columbus, O.

WANTED.—To exchange for bees, one ladies' bicycle, one 4x5 photo outfit, and one breech-loading shotgun, all like new.

M. W. SHEPHERD, Wakeman, Ohio.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price.

OREL L. HERSHISER,

301 Huntington Ave., Buffalo, N. Y.

WANTED.—Bees on shares or lease for season of 1909; Pacific States preferred.

C. A. WURTH, 640 Leverette St., Fayetteville, Arkansas.

For Sale

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Melilotus (sweet clover) seed for sale at 8 cts. per lb. Write for catalog and particulars.

W. P. SMITH, Penn, Miss.

200 Bee Hives at a sacrifice; practically as good as new; set up and well painted, ready for the bees. Shipped to take K. D. rate. Regular Dovetailed and Langstroth, \$1.00 each. Langstroth-Simplicity and plain joint hives, 75 cts. each; four-frame automatic extractor, \$17.00. 60-lb. can honey, \$5.95.

L. M. GULDEN, Osakis, Minn.

FOR SALE.—Barnes combined machine, with two 6-in. and two 8-in. saws; one set Hutter cutter-heads; used two months; good as new. I have my lumber worked up; will sell for \$35, cost \$45.

J. B. HOLLOPETER, Pentz, Pa.

FOR SALE.—Beautiful long-haired Persian and Angora cats and kittens; solid whites and various colors; none better. Send stamp for written reply.

KENSINGTON CATTERY, Marion, Ohio.

FOR SALE OR TRADE.—One Humphrey green bone-cutter, good as new—cost \$12. Would like to trade for a good Oliver typewriter and pay difference.

A. M. RINGER, New Lexington, Ohio.

FOR SALE.—Klondike strawberry-plants, \$3.00 per M., f. o. b. Beautiful magnolia-trees, 3 for 50 cts. postpaid.

R. H. MANLY, Rfverton, La.

FOR SALE.—Sweet-clover seed, 15 cts. per pound, postage extra. Root's supplies. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—Young English ring-neck pheasants. Cheap. Am overcrowded. Also old stock.

RIVERSIDE PHEASANTRY, Dorchester, Wis.

Poultry Offers

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc.

STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

Post Cards.

Eight beautiful Christmas or New Year's Cards mailed for 15c; 13 for 25c. Also birthday, comic, or miscellaneous cards. Say what you wish, and whether for adults or children.

M. T. WRIGHT, Medina, Ohio.

Help Wanted

WANTED.—Capable man 30 to 40 years of age, married, to take charge of small farm in Ohio. State experience, salary wanted, date could begin, and give names of references. Address JOHN SMITH, Gleanings in Bee Culture, Medina, O.

WANTED.—An intelligent man of modern ideas to take charge of small farm and cranberry-bog. Farm on shares; bogan salary. Address LOCK BOX 98, Bordentown, N. J.

Real Estate for Bee-keepers

PECOS VALLEY of New Mexico lands are coining \$50 to \$65 net per acre per year from alfalfa. Forty-five thousand acres of alfalfa in bloom five times a year, surrounding Artesia, means *honey for the bee-keeper*. Live in an ideal fruit country, where the largest artesian wells in the world constantly pour out their wealth. Artesia, the future Rose City, already has the famous "Mile of Roses." Homeseekers' excursions the first and third Tuesdays of each month. Agents wanted, to accompany parties. Write to-day to R. M. LOVE, General Agent, Artesia, N. M.

FOR SALE.—Five-acre tract, $\frac{3}{4}$ mile from center of Nampa, Ida.; cultivated; three-room house; rooms 14x18, 14x14, 14x12; cement walls, nicely papered; cellar under house; well of good water on back porch; two 18-ft. porches; two-story barn; room for 6 head of stock and 4 tons of hay; sheds for three wagons, etc. Price \$2500, if sold at once. U. S. Government water-right, best there is. Nampa is the best town on short line; unexcelled for bees. Address H. M. RUDDOCK, Caldwell, Ida.

CALIFORNIA SELF-SUPPORTING HOMES. Choice lands for them near Sacramento. Perfect health. Purest water. Inexhaustible wells, \$6. No extreme heat. Oranges ripen in winter. Wholesale grapes clear \$100; 250 hens clear \$500 yearly. No farming. No peddling. Like town life. Only desirable families. Neighbors endorse this advertisement. \$75. Easy terms. B. MARKS, Box 28, Galt, California.

FOR SALE.—Five or ten acres in the beautiful town of Orlando, Fla. Will sell very cheap, or exchange for Canadian property. C. H. LEWIS, 85 Victoria Ave. N., Hamilton, Ont., Can.

FOR SALE.—See ad. in Vol. 36, No. 15. No fires here; unlimited bee-range; tender fruits and vegetables mature. Canon Ranch. Old age. Must sell. F. F. GEORGE, Fraser, Ida.

FOR SALE.—Forty acres of unimproved timber; fruit, poultry, or bees; \$3.00 per acre. W. G. SKINGLEY, Des Arc, Mo.

FOR SALE.—Salt River lands in Arizona, under Roosevelt dam. C. F. PULSIFER, Alhambra, Arizona.

FOR SALE.—32 acres land, orange-grove, apiary and chicken ranch. J. W. BANNEHR, Bradentown, Fla.

Bee-keepers' Directory

I no longer club a queen with GLEANINGS.

W. T. CRAWFORD, Hineston, La.

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

No more queens for sale this fall.

A. W. YATES, 3 Chapman St., Hartford, Ct.

GOLDEN yellow Italian queens—my specialty. Price list free. E. E. LAWRENCE, Doniphan, Mo.

ROOT'S BEE SUPPLIES. Send for catalog.

D. COOLEY, Kendall, Mich.

Well-bred bees and queens. Hives and supplies.

J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card

T. F. BINGHAM, Farwell, Mich.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Golden-all-over and red-clover Italian queens; circular ready

W. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Root's bee-supplies at factory prices, *Black Diamond Brand Honey*, and *bee-literature*. Catalog and circulars free.

GEO. S. GRAFFAM & BRO., Bangor, Maine.

QUEENS.—Improved red-clover Italians, bred for business, June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, \$1.00 each. Safe arrival and satisfaction guaranteed.

H. C. CLEMONS, Boyd, Ky.

Improved Italian queens now ready. Nuclei and colonies May 1 to 10. Over twenty years a breeder; 500 colonies to draw on. Free circulars and testimonials. For prices see large advertisement in this issue.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.

ITALIAN BEES AND QUEENS. I breed three-banded stock only, and use the finest breeding stock to be had. Send for price list. Twenty-five years' experience.

F. J. WARDELL, Uhrichsville, O.

Breeding queens of pure Caucasian and Carniolan races—price \$3.00. Order from A. E. Titoff, Expert in Apiculture, with Russian Department of Agriculture, Kiev, Russia. Remit with orders. Correspondence in English.

Special Notices by A. I. Root

After you see this, address *me*, individually, at Bradentown, Fla., instead of Medina, O.

AN AERMOTOR OR GASOLINE-ENGINE FOR PUMPING WATER—WHICH?

I have spent some time in looking over the agricultural papers with the view of deciding whether I should pump with a windmill or a cheap engine for our one acre of land in Bradentown, Fla. The windmill is certainly the cheaper of the two, and it does not require any outlay for gasoline. But there are two objections: First, with the windmill you must have a reservoir to hold water to be used when the wind does not blow. This may cost as much as the windmill, or even more. Second, even in Florida we sometimes have several days with but little wind when we might need it badly and could not get it. This little engine will, however, give you an even steady stream just as long as you want it, and no longer, so there is no particular need of having a reservoir; and with such a rig it makes no difference whether the wind blows or not. In fact, it is very desirable many times to water your stuff just about sundown, and perhaps after dark; and that is the time when the wind is especially liable to "die down." Well, while I was considering all of these questions I happened to notice a pretty little advertisement on p. 1396 of our last issue. Just as soon as my eye caught a glimpse of the picture I wanted to swing my hat, and the price of the little engine is only \$37.50. I wish to congratulate the Aermotor folks on having hit upon such a neat device to "back up" the wind.

SWEET-CLOVER SEED.

We have on hand a good stock of choice sweet-clover seed, both white and yellow. Of the white we have both unhulled and hulled seed, and of the yellow we have at present about 250 pounds hulled, and have engaged a lot of unhulled yellow, which is expected to arrive soon. It is usually difficult to supply the entire demand for unhulled, white and yellow, and we suggest immediate orders, to be sure of getting some of our present stock. Prices are as follows:

In lots of	1 lb.	10 lbs.	25 lbs.	100 lbs.
Unhulled white, per lb.,	\$.15	.13	.12	.11
Hulled white, per lb.,	.22	.20	.19	.18
Unhulled yellow, per lb.,	.18	.16	.15	.14
Hulled yellow, per lb.,	.25	.23	.22	.21

If sent by mail, add 8 cents per lb. for postage. Leaflet on sweet clover sent with each lot of seed if requested.



THE YOUTH'S COMPANION

For 1909

The Best Christmas Present for \$ 1.75

There never was a household to which a Christmas Present of a year's subscription for The Youth's Companion did not bring unfeigned pleasure. If it is given to one of the younger members of the family, the older ones will have a large share in it. What other present costing so little is so certain to be appreciated and welcomed?

The fifty-two issues for 1909 will contain as much reading as twenty 400-page books of fiction, history, etc., ordinarily costing \$1.50 each.

Send for Sample Copies of the Paper and Illustrated Announcement of the New Volume.

CHRISTMAS PRESENT COUPON.

EVERY NEW SUBSCRIBER who at once cuts out and sends this slip (or the name of this publication) with \$1.75 will receive JM70

- GIFT 1.** All the remaining issues for 1908, including the Thanksgiving and Christmas Holiday Numbers.
- GIFT 2.** The 1909 Calendar, "In Grandmother's Garden," lithographed in thirteen colors, size 8 x 24 inches.
- Then The Companion for the 52 weeks of 1909—a library of the best reading for all the family.

THE YOUTH'S COMPANION, BOSTON, MASSACHUSETTS.



Before buying your Comb Foundation, or disposing of your beeswax, be sure to get our prices on wax and foundation, or our prices on working wax into foundation.

We are also in a position to quote you prices on hives, sections, and all other supplies. We give LIBERAL DISCOUNTS during the months of November, December, January, and February.

Remember that

DADANT'S FOUNDATION

is the very best that money can buy.

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